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CATALOGUE

OF

LEPIDOPTEROUS INSECTS.

VOLUME II

A CATALOGUE

OF THE

LEPIDOPTEROUS INSECTS

IN THE

Museum of Natural History

AT

THE EAST-INDIA HOUSE.

BY

THOMAS HORSFIELD, M. & PH. D., F.R.S.,

Keeper of the Museum,

AND

FREDERIC MOORE,

Assistant.

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ERRATA.

Vol. I. Appendix, p. 1, No. 81, *Myrina Triopas*, for figs. 5, 5*a*, read 7, 7*a*.

„ Appendix, p. 1, No. 93, *Anops Thetys*, for figs. 7, 7*a*, read 5, 5*a*.

CATALOGUE

OF THE

LEPIDOPTEROUS INSECTS.

Tribe III.—BOMBYCES.

The Bombyces comprise in this Catalogue all those Lepidopterous Insects which, in their metamorphosis, construct a covering or case (folliculus or incunabulum), which is generally called a cocoon. This covering is a characteristic distinction of the whole Tribe, and has in each Species a peculiar form, which is reproduced instinctively with an unvarying uniformity. It is compared very imperfectly to Spinning and Weaving, and the term Spinners or Weavers has been applied to them in the Wiener Verzeichniss.—("*Zu ihrer Verwandlung spinnen sie ein Gewebe.* Metamorphosis in tela.")

The Bombyces form a distinct tribe, equal in rank to the Papiliones and Sphinges, and are related to the latter by the genera Ægeria, Zygæna, and Eusemia, and to the Noctuidæ by Hepialus.

In their metamorphosis they present different types of form or stirpes, to which the names used in the Wiener Verzeichniss have, in most cases, been appropriated. Their denominations are as follows, viz.:—

Stirps 1. Larvæ Sphingiformes.
„ 2. „ Fasciculatæ.
„ 3. „ Ursinæ.
„ 4. „ Cuspidatæ.
„ 5. „ Verticillatæ.
„ 6. „ Limaciformes.
„ 7. „ Pilosæ.
„ 8. „ Lignivoræ.

It is my duty to inform the Entomological student that the subdivision here proposed is, at the present period, only *provisional*. My materials consist chiefly of the collections made by myself in Java, and of some contributions liberally supplied by my friend A. Grote, Esq., from the neighbourhood of Calcutta, in Continental

Ir lia; I desire, therefore, that the work may not be considered as a final subdivision of this Tribe.

It is manifest to all Entomologists that the transformations in this Tribe have, as yet, been very imperfectly observed and recorded; most of those of African Australian, and American Lepidoptera are a desideratum in science, although those of Europe have been largely illustrated by Hübner. The final subdivision of this Tribe, formed on the Metamorphosis of the several species, remains for some future Entomologist, who may undertake the examination and arrangement of this Tribe with the views applied by Vigors to Birds, and by De Haan to Crustacea.

The most prominent types of form among those above enumerated are the following; viz.,—Sphingiformes, Fasciculatæ, Cuspidatæ, Verticillatæ, and Limaciformes, which I enumerate as those Stirpes into which the entire Tribe may be resolved, when more complete materials shall have been obtained.

Respecting the first stirps here proposed, named Sphingiformes, I have to state briefly, that it is divided into three sections. The first section contains the genera allied to the Zygænidæ of authors. Of the genus Eusemia, belonging to this section, we have the larvæ of five species, but unfortunately the cocoon has not been preserved. The second and third sections consist of genera which are variously arranged by authors. In Mr. F. Walker's Catalogue of the Lepidopterous Insects contained in the British Museum, all the genera of our collection are placed in the family of Lithosiidæ; and this determination, formed from the examination of the perfect insect, agrees with the conclusion to which I have arrived from the examination of the metamorphosis. As, however, has been observed, Entomologists entertain different views respecting the natural position of this extensive group. M. Latreille, in the first edition of the Règne Animal, vol. iii. p. 570, has the following remark:—

"Les *Lithosies* de Fabricius paraissent, sous plusieurs rapports naturels, avoisiner les Lépidoptères de cette tribu (les *Callimorphes*); mais nous les placerons, à raison de leur forme étroite et allongée, dans la tribu des *Tinéites*, comme avait fait Linnæus."

Mr. Stephens places them among his Lepidoptera Nocturna (Brit. Ent. ii. p. 88). By Mr. Westwood they form the eighth family of his subdivision of the Heterocera, and he mentions their close affinity to the aberrant Arctiidæ.

Tribe III. BOMBYCES.

Bombycidæ, *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 20, 24, 27 (1828).

Phalænæ, *sect.* I., Bombyces, *Denis et Schiffermüller, Systematisches Verzeichniss von den Schmetterlingen der Wiener Gegend (generally quoted as the Wien. Verz.), p.* 48 (1776).

Sphinges *et* Noctuæ, *pt. Denis et Schiffermüller*, id. *pp.* 43, 67.

Phalæna, *sect.* I. II., Attaci *et* Bombyces, *et sect.* III. Noctuæ, *pt. Linn., S. N.* I. *pt.* II. *pp.* 808–9 (1767).

Sphinx, *sect.* 3, *pt. et* 4, *Linnæus* (1767).

Bombyx, *pt. et* Sphinx, *div.* II., Sesiæ, *pt. Haworth, Lep. Brit. pp.* 55, 65, 67 (1803).

Lep. Crepuscularia, *pt. et* Lep. Nocturna, *pt. Latreille, Gén. Crust. et Ins.* IV. *pp.* 187, 189, 209, 216 (1809). *Stephens, Ill. Brit. Ins. Haust.* I. *p.* 104 (1828); id. II. *pp.* 1, 86 (1829); id. *Catal. Brit. Lep. Brit. Mus. pp.* 24, 34 (1850).

Fusicornes *seu* Closteroceres, *pt.*, Filicornes *seu* Nematocères, *et* Seticornes *seu* Chetoceres, *pt. Dumeril, Consid. Gén. des Ins. p.* 139 (1823).

Lep. Pomeridiana *et* Lep. Semidiurna, *pt. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 2 (1829); III. *p.* 140 (1831); IV. *p.* 3 (1834); id. *Catal. Brit. Lep. Brit. Mus. pp.* 34, 156 (1850).

Heterocera, *pt. Boisduval et Leconte, Icon. Lép.* I. *p.* 39 (1836). *Boisduval, Ind. Méth. p.* 39 (1840). *Westwood, Introd.* II. *p.* 363 (1840). *Stephens, Catal. Brit. Lep. Brit. Mus. pt.* I. *p.* 24 (1850). *Walker, Catal. Lep. Het. Brit. Mus. pt.* I. *p.* 1 (1854). *Stainton, Ins. Brit. Lep. Tineina, p.* 2 (1855); id. *Manual Brit. Lep. p.* 72 (1856).

Chalinoptera, *pt. Blanchard, Hist. Nat. les Ins.* II. *pp.* 322, 349 (1845). *Chenu, Enc. d'Hist. Nat. Pap. p.* 232.

Bombycites, Noctuo-Bombycites, *pt.* Phalænites, *pt. et* Tineites, *pt. Latreille, Gén. Crust. et Ins.* IV. *pp.* 190, 191, 216, 219, 226 (1809).

Sphinges, *pt. Hübner, Zuträge, p.* 4 (1818). *H. Doubleday, List Brit. Lep. p.* 3 (1850).

Sphingina, *pt. Stainton, Ins. Brit. Lep. Tineina, p.* 2 (1855); id. *Manual Brit. Lep. p.* 72 (1856).

Sphingiariæ *et* Sesiariæ, *pt. Boisduval, Ind. Méth. pp.* 39, 41 (1840).

Anthroceridæ *et* Fam. IV. *to* VIII. *Westwood, Introd. pp.* 371, 390 (1840).

Zygænides, *Duncan, in Brewster's Edinb. Encyclop.* IX. *p.* 131 (1830). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 62 (1854).

Zygænides *et* Tribes XV. *to* XXV., *Boisduval, Ind. Méth. pp.* 50, 84 (1840).

Zygænii *et* Bombycii, *Blanchard, Hist. Nat. des Ins.* II. *pp.* 323, 353, 360 (1845).

Sesii, *pt., et* Castnii, *pt. Blanchard, Hist. Nat. des Ins.* II. *pp.* 323, 349, 351 (1845). *Walker, List Lep. Het. Brit. Mus. pt.* I. *pp.* 2, 10 (1854).

Ægerii, *Walker, List Lep. Het. Brit. Mus. pt.* VIII. *p.* 1 (1856).

Phalænæ, *Hübner, Zuträge, p.* 4 (1818). *Newman, Sph. Vesp. pp.* 38, 40 (1832).

Bombycides, *Duncan, in Brewster's Edinb. Encyclop.* IX. *p.* 131 (1830). *Swainson, Cabinet Cyclop. Ins. p.* 106 (1840). *Blanchard, Hist Nat. des Ins.* II. *p.* 361 (1845).

Phalænina, *et* Pyralina, *pt. Newman, Ent. Mag.* II. *pp.* 383, 384 (1834).

Bombyces, *H. Doubleday, List Brit. Lep. p.* 3 (1850).

Bombycina, *Stainton, Ins. Brit. Lep. Tineina, p.* 2 (1855); id. *Manual Brit. Lep. pp.* 72, 107 (1856). *Newman, Trans. Ent. Soc.* IV. *n. s. p.* 55 (1857).

Bombycites, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 277 (1854).

Noctuidæ, *pt.* (*Stirps* II. *et* III.), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 28, 29, 30 (1828).

Stirps I. Larvæ SPHINGIFORMES.

SPHINX, *sect.* 3, *pt. et* 4, *Linnæus, S. N.* I II. (1767).

SPHINX, *sect.* SESIÆ, *pt. Gmelin. Haworth.*

SPHINX, *sect.* ZYGÆNÆ, *Gmelin.*

SPHINGES, *pt.* (*larvæ F. G.*), *Denis et Schiffermüller, Wien. Verz. p.* 43 (1776).

ZYGÆNIDES, *pt. Latreille* (1809).

PHALÆNA, *sect.* ATTACI, *et* NOCTUÆ, *pt. Linnæus.*

The *first Stirps*, named *Sphingiformes*, present in their transformations three different sections, the first section forming a natural junction with the SPHINGES.

SECTION I.

Larva elongate, uniformly cylindrical; or, as in *Agrista* and *Eusemia*, with an anal prominence, subpilose. Metamorphosis:—Cocoon of a loose silken texture. The perfect insect has long wings, which in most cases are maculated with bright colours; flies by day; antennæ fusiform, or moderately bipectinated, curved outward at the apex; proboscis short; abdomen long and attenuate.

SPHINX, *sect.* 3 *et* 4, *pt. Linnæus, S. N.* I. II. *p.* 796 (1767).

SPHINX, *sect.* SESIÆ, *pt. et* ZYGÆNÆ, *Gmelin, S. N.* I. V. *pp.* 2386, 2390.

SPHINX, *div.* SESIÆ, *sect. Denudatæ, subsect.* 2, 3, *Haworth, Lep. Brit. pp.* 55, 65 (1803).

SPHINGES (*larvæ F. G. pt.*), *Denis et Schiffermuller, Wien. Verz. p.* 43 (1776).

NOCTUIDÆ, *pt.* (*Stirps* III. *Fasciata pt.*), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 29, 30 (1828).

ZYGÆNIDES, *pt. Latreille, Gén. Crust. et Ins.* IV. *pp.* 189, 211 (1809). *Boisduval, Ind. Méth. p.* 50 (1840). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 62 (1854).

ZYGÆNIDÆ, *Leach, Edinb. Encycl. p.* (1815).

SPHINGES, *pt. Hubner, Zuträge, p.* 4 (1818). *Newman, Sph. Vesp. p.* 35 (1832). *H. Doubleday, List Brit. Lep. p.* 3 (1850).

ÆGERIIDÆ, *Stephens, Ill. Brit. Ins. Haust.* I. *p.* 136 (1828); id. *Catal. Brit. Lep. Brit. Mus. p.* 30 (1850). *Stainton, Manual Brit. Lep. pp.* 75, 100 (1856). *Westwood, Introd.* II. *p.* 373 (1840). *Walker, List Lep. Het. Brit. Mus. pt.* VIII. *p.* 7 (1856).

ZYGÆNIDÆ, *pt. Stephens, Ill. Brit. Ins. Haust.* I. *p.* 105 (1828); id. *Catal. Brit. Lep. Brit. Mus. p.* 24 (1850). *Swainson, Cabinet Cyclop. p.* 102 (1840). *Stainton, Manual Brit. Lep. pp.* 75, 76 (1856).

COSSI, *pt.* ÆGERIÆ, *et* ZYGÆNÆ, *Newman, Sph. Vesp. pp.* 35, 36, 41 (1832).

STYGIIDÆ, ÆGERIITES *et* GLAUCOPITES, *pt. Newman, Entom. May.* I. *p.* 67 (1832); II. *p.* 384 (1834); id. *History of Ins. 2nd edit. p.* 213 (1841).

URANIIDÆ, *pt. et* ANTHROCERIDÆ, *pt. Westwood, Introd.* II. *pp.* 369, 371 (1840).

STYGIARIÆ *et* SESIARIÆ, *pt. Boisduval, Ind. Méth. pp.* 39, 41 (1840).

AGARISTIDÆ, *Swainson, Cabinet Cyclop. p.* 102 (1840).

TROCHILIIDÆ, *Westwood, Brit. Butt.* I. *p.* 32 (1842).

SESIIDES, CHIMERIDES, *et* ZYGÆNITES, *pt. Blanchard, Hist. Nat. des Ins.* II. *pp.* 352, 354 (1845).

AGARISTITES *et* CASTNITES, *pt.* HEPIALIDES, *pt. Blanchard, Hist. Nat. des Ins.* II. *pp.* 350, 364 (1845).

STYGIIDÆ, *Walker, List Lep. Het. Brit. Mus. pt.* VIII. *p.* 1 (1856).

SESIOIDEA, ZYGÆNOIDEA, *et* AGARISTOIDEA, *Herr. Schäffer, Lep. Exot. Spec. Nov. pp.* 57, 71 (1858).

Genus MELITTIA, *Hübner.*

MELITTIA, *Hübner, Verz. bek. Schmett. p.* 128 (1816).

646. *MELITTIA BOMBYLIFORMIS, Cramer Sp.*

Sphinx Bombyliformis, *Cramer, Pap. Exot.* IV. *p.* 241, *pl.* 400, *f. C.* (1782).

Melittia Bombyliformis, *Walker, List Lep. Het. Brit. Mus. pt.* VIII. *p.* 69 (1856).

Melittia Anthedoniformis, *Hübner, Verz. bek. Schmett. p.* 128.

Trochilium Phorcus, *Westwood, Cabinet Orient. Ent. p.* 62, *pl.* 30, *f.* 7 (1847).

a. b. Java. From Dr. Horsfield's Collection.

647. *MELITTIA EURYTION, Westwood Sp.*

Trochilium Eurytion, *Westwood, Cabinet Orient. Ent. p.* 62, *pl.* 30, *f.* 5 (1847).

Melittia Eurytion, *Walker, List Lep. Het. Brit. Mus. pt.* VIII. *p.* 70 (1856).

a. Java. From Dr. Horsfield's Collection.

b. N. India. From Capt. Harrington's Collection.

Genus PARANTHRENE, *Hübner.*

PARANTHRENE, *Hübner, Verz. bek. Schmett. p.* 128 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* VIII. *p.* 13.

MEMYTHRUS, *Newman, Ent. Mag.* I. *p.* 85 (1832).

618. *PARANTHRENE SESIIFORMIS, Moore.*

Paranthrene Sesiiformis, n. sp.—Male, *fore-wings* brown, tinged with purple; *hind-wings* limpid; ciliæ brown; antennæ slightly pectinated. *Body* rich dark purple-brown; *palpi* in front, and a narrow band round the neck yellow; *abdomen* with a deep yellow spot on the side of all the segments, except the third, each segment also having a narrow red and blue line below the yellow spot; apical tuft blackish, yellow in the middle and at the sides; *legs* blackish, the tibia of the fore-legs and tibia and tarsi of the hind-legs yellowish. Allied to *P. Vespipennis*, Boisd., from China. Length of the body $\frac{5}{12}$ in.; across the wings 1 in.

a. b. Java. From Dr. Horsfield's Collection.

Genus ZYGÆNA, *Fabricius.*

ZYGÆNA, *Fabricius, Syst. Ent. p.* 550 (1775); *Syst. Gloss.* (*Illiger's Mag.* IV. 1807).

ANTHROCERA, *Scopoli, Intr. Hist. Nat.* I. *p.* 411 (1777).

649. *ZYGÆNA CASHMIRENSIS, Kollar.*

Zygæna Cashmirensis, *Kollar, in Hügel's Kaschmir, IV. pt. II. p. 459, pl. 19, f. 6 (1844). Walker, List Lep. Het. Brit. Mus. pt. I. p. 102.*

a. N. India. Presented by Colonel Buckley.

650. *ZYGÆNA AFGHANA, Moore* (*Plate* VII*a. fig.* 3).

Zygæna Afghana, n. sp.—Fore-wing with four red spots; the first large, quadrate near the base, occupying the space from anterior to posterior margin; the second outwardly oblique across the middle of the wing; the third small near anterior margin; the fourth oblong near the apex: all the spots margined with yellowish white. *Hind-wing* red, with narrow black margin near the apex. *Body* with a circle round the neck; shoulders and abdomen red. Expanse of wings $1\frac{1}{12}$ in.

a. b. Afghanistan. From Griffith's Collection.

Genus ÆGOCERA, *Latreille.*

ÆGOCERA, *Latreille, Gén. Crust. et Ins.* IV. *p.* 211 (1809). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 55.

651. *ÆGOCERA VENULIA, Cramer Sp.*

Phalæna Noctua Venulia, *Cramer, Pap. Exot.* II. *p.* 107, *pl.* 165, *f. D* (1779).

Ægocera Venulia, *Latreille, Gén. Crust. et Ins.* IV. *p.* 211. *Dalman, Anal. Ent. p.* 49. *Boisduval, Monogr. Zyg. p.* 13, *pl.* 1, *f.* 3. *Chenu, Enc. d'Hist. Nat. Pap. p.* 236, *f.* 404. *Crochard, ed. Règn. Anim. Atlas, Ins. pl.* 148, *f.* 1. *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 55.

Bombyx Venulia, *Fabricius, Suppl. Ent. p.* 158.

a. b. c. ♂ ♀. Bengal. From the Asiatic Society of Bengal.

d. e. f. ♂ ♀. N. India. Presented by General Hearsey.

652. *ÆGOCERA BIMACULA, Walker.*

Ægocera Bimacula, *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 57 (1851).

a. Canara. Presented by S. N. Ward, Esq.

b. N. India. Presented by General Hearsey.

Genus EUSEMIA, *Dalman.*

EUSEMIA, *Dalman, Vet. Acad. Handl.* (1824). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 46.

HERACLIA, *pt. Hübner.*

AGARISTA, *pt. Boisduval.*

653. *EUSEMIA VETULA, Hübner Sp.*

Heraclia Vetula, *Hübner, Geyer, Zuträge, Samml. Exot. Schmett. pt.* III. *p.* 17, *f.* 657-658 (1832).

a. b. c. Java. From Dr. Horsfield's Collection.

d. e. Assam. Presented by Col. Buckley.

654. *EUSEMIA MACULATRIX, Westwood.*

Eusemia maculatrix, *Westwood, Nat. Libr. Exot Moths, p.* 88. *Cabinet Orient. Ent. p.* 67, *pl.* 33, *f.* 1 (1847). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 47.

Eusemia fasciatrix, *Westwood, Cabinet Orient. Ent. p.* 67.

a. b. c. d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

655. *EUSEMIA DENTATRIX, Westwood.*

Eusemia dentatrix, *Westwood, Cabinet Orient. Ent. p.* 68, *pl.* 33, *f.* 5 (1847). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 46.

a. Bootan. From Pemberton's Collection.

b. c. d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

656. *EUSEMIA BISMA, Moore.*

Eusemia maculatrix, var. *η. Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 48.

Eusemia Bisma, n. sp.—Black, allied to *E. maculatrix*, but differs by the *fore-wing* having only two maculated bands, the first composed of two yellow spots, the second of six rather large elongated subfusiform white spots. *Hind-wings* red, anterior spot dentate, discal spot emitting two lines to the outer border, the latter containing three and sometimes two smaller white dots. Expanse 3 in.

The larva and pupa of *E. Bisma* are figured on Plate XIII.,

figs. 1, 1*a*, from Java. "Feeds on the *Uwi* (*Dioscorea oppositifolia*). Very scarce. December and January. Difficult to feed and raise." —(Horsfield, MS.)

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

657. *EUSEMIA ADULATRIX, Kollar.*

Eusemia adulatrix, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II. *p.* 464, *pl.* 20, *f.* 1 (1844).

Eusemia Bellatrix, *Westwood, Cabinet Orient. Ent. p.* 67, *pl.* 33, *f.* 2 (1847). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 46.

a. N. India. From the Asiatic Society of Bengal.

b. c. N. India. Presented by Col. Buckley.

d. N. India. Presented by General Hearsey.

e. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

658. *EUSEMIA CONNEXA, Walker.*

Eusemia connexa, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1773 (1856).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

659. *EUSEMIA ARUNA, Moore.*

Eusemia Aruna, n. sp.—*Fore-wing* black, with two pale-yellow maculated bands, the first of four interrupted spots one-third from the base, the second of four smaller spots one-third from the apex. *Hind-wing* broadly at the base, with small dentate spot, and broad exterior band black, the inner transverse space being deep ochrey-yellow. Ciliæ at apex of fore-wing and whole length of hind-wing white. Body black; face, chest, and abdominal bands ochrey-yellow. Expanse of wings 3 in.

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

660. *EUSEMIA VICTRIX, Westwood.*

Eusemia Victrix, *Westwood, Cabinet Orient. Ent. p.* 67, *pl.* 33, *f.* 3 (1847). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 52.

a. Bootan. From Pemberton's Collection.
b. c. Cherra Poonjee. Presented by Col. Buckley.
d. e. f. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

661. *EUSEMIA AMATRIX, Westwood.*

Eusemia amatrix, *Westwood, Cabinet Orient. Ent. p.* 68, *pl.* 33, *f.* 4 (1847). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 49.

a. b. c. d. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Eus. amatrix* are figured on Plate XIII. figs. 2, 2*a*, from Java. "Feeds on a species of *Cissus*, bearing the native name of *Chiching* or *Jijing*. December."—(Horsfield, MS.)

662. *EUSEMIA BELANGERI, Guérin-Méneville.*

Eusemia Belangerii, *Guérin-Méneville, Voy. de Belanger, Atlas Ins. pl.* 5, *f.* 3 ( ).
Eusemia amatrix, var. *a*. *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 49.

a. b. Java. From Dr. Horsfield's Collection.

663. *EUSEMIA PESHWA, Moore* (*Pl.* VII*a*., *fig.* 2).

Eusemia Peshwa, n. sp.—Dark brown, *fore-wing* with three pale yellow spots; the first small, quadrate, basal; the second larger, somewhat oval; the third still larger, and concave exteriorly; and some metallic marks between the spots. *Hind-wing* with abdominal margin ochrey-yellow, and a pale yellow discal spot. Ciliæ at apex of each wing white; thorax dark brown; top of head, front of palpi, a spot at each side and at base of thorax pale yellow; abdomen, body beneath, and legs ochrey-yellow; a line down base of abdomen, and narrow bands to the segments, black; all the tarsi, and two spots on the fore-tibia, black; the fore-tarsi pale yellow at each point. Expanse of wings 1¼ in. to 2¼ in.

a. N. India. Presented by Col. Buckley.
b. Ceylon. From M. E. Jonville's Collection.

664. *EUSEMIA LUCTIFERA, Boisduval Sp.*

Agarista luctifera, *Boisduval, Spéc. Gén. Lép.* I. *pl.* 14, *f.* 4 (1836). *Walker, List Lep. Het Brit. Mus. pt.* I. *p.* 53.

a. Java. From Dr. Horsfield's Collection.

365. *EUSEMIA BASALIS, Walker.*

Eusemia basalis, *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 53 (1854).

a. ♀. N. India. Presented by Colonel Buckley.

The larva and pupa of *Eus. basalis* are figured on Plate XIII. figs. 3, 3*a*, copied from the original drawings in the collection of A. Grote, Esq.

"Feeds on *Dillenia*."—(Grote, MS.)

666. *EUSEMIA MILETÈ, Cramer Sp.*

Phalæna-Noctua Milete, *Cramer, Pap. Exot.* I. *p.* 26, *pl.* 18, *f. D* (1779).

Eusemia Melite, *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 53 (1854).

a. b. c. d. e. f. g. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Eus. Milete* are figured on Plate XIII., figs. 4, 4*a*, from Java. "Feeds on a species of *Cissus*, bearing the native name of *Galing*. December to February. Abundant."—(Horsfield, MS.)

667. *EUSEMIA TRANSIENS, Walker.*

Eusemia transiens, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1588 (1856).

a. b. ♂. Java. From Dr. Horsfield's Collection.

c. d. e. f. g. h. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva and pupa of *Eus. transiens* are figured on Plate XIII., figs. 5, 5*a*, from Java. "Feeds on the *Galing* (*Cissus?*). December."—(Horsfield, MS.)

Genus CLEOSIRIS, *Boisduval.*

CLEOSIRIS, *Boisduval, Spéc. Gén. Lép.* I. *pl.* 23, *f.* 3 (1836).

TETRAGONUS, *pt. Hübner.*

668. *CLEOSIRIS CATAMITA, Hübner Sp.*

Tetragonus Catamitus, *Hübner, Geyer, Zutrage, pt.* IV. *p.* 17, *f.* 653, 654 (1832).

Cleosiris Catamita, *Boisduval, Spéc. Gén. Lép. pl.* 23, *f.*? *Westwood, in Doubleday and Hewitson's Diurnal Lep. p.* 504, *pl.* 77, *f.* 9.

a. b. Java. From Dr. Horsfield's Collection.

SECTION II.

Larva either slightly tuberculate, hairy, with a prominence on the third or fourth segment and on the anal extremity, or more regularly cylindrical and hairy. Metamorphosis:—Cocoon large, oval, the interior being cellular, or consisting of a delicate filiform web. The perfect insect has long narrow wings; flies by twilight and darkness; antennæ setaceous, or more or less bipectinated; proboscis short; abdomen slender.

PHALÆNA, *sect.* III. NOCTUÆ, *pt. Linnæus, S. N.* I. II. *pp.* 809, 823 (1767).

NOCTUÆ, *pt.* (*Larva C. fusiformes*), *Denis et Schiffermüller, Wien. Verz. p.* 67 (1776).

NOCTUIDÆ, *pt.* (*Stirps* II. *et* III. *pt.*), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 28, 30 (1828).

NOCTUO-BOMBYCITES, *pt. et* TINEITES, *pt. Latreille, Gén. Crust. et Ins.* IV. *pp.* 190, 219 (1809).

TINEIDA, *pt. Duncan, in Brewster's Edinb. Encycl.* IX. *p.* 133 (1830).

LITHOSIIDÆ, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 88 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 59 (1850). *Westwood, Introd.* II. *p.* 390 (1840). *Stainton, Manual Brit. Lep. pp.* 107, 135 (1856).

LITHOSIÆ, *Hübner, Zuträge, p.* 4 (1818). *Newman, Sph. Vesp. p.* 43 (1832).

ARCTIITES, *pt. Newman, Entom. Mag.* II. *p.* 383 (1834); id. *Hist. of Ins. 2nd edit. p.* 212 (1841).

LITHOSIADÆ, *Swainson, Cabinet Cyclop. p.* 196 (1840).

LITHOSIDES, *Boisduval, Ind. Méth. p.* 56 (1840).

LITHOSIITES, *pt. Blanchard, Hist. Nat. des Ins.* II. *pp.* 362, 363 (1845).

LITHOSIIDÆ, *pt. Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 279 (1851).

HYPSIDÆ, LITHOSIIDÆ, *et* CALLIMORPHIDÆ, *Walker*, id. *pt.* VII. *pp.* 1673, 1677, 1683 (1856).

CHELONARII, *Boisduval*

Chelonidæ, *pt. Stainton, Manual Brit. Lep. pp.* 107, 142 (1856).

Lithosina *et* Aganaidea, *Herr. Schäffer, Lep. Exot. Spec. Nov. pp.* 69, 70 (1858).

Genus HYPSA, *Hübner.*

Hypsa *et* Damalis, *Hübner, Verz. bek. Schmett. p.* 172 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* II. *pp.* 444, 457.

Aganaides *et* Aganais, *Boisduval, Faun. Ent. de Madag. etc., Lép. p.* 96; *Voy. de l'Astrolabe, Lép pt.* I. *p.* 248 (1832).

Aspa *et* Lacides, *Walker, List Lep. Het. Brit. Mus. pt.* II. *pp.* 452, 456 (1854).

Phalæna-Noctua, *pt. Linnæus.*

Phalæna-Bombyx, *pt. Fabricius.*

Rhodogastria, *pt. Hübner.*

669. *HYPSA ALCIPHRON, Cramer Sp.*

Phalæna-Attacus Alciphron, *Cramer, Pap. Exot.* II. *p.* 58, *pl.* 133, *f. E* (1779).

Noctua Caricæ, *Fabricius, Ent. Syst.* II. III. *p.* 27 (1793). *Donovan, Epit. Ins. of New Holl. pt.*

Damalis Caricæ, *Hübner, Verz. bek. Schmett. p.* 172.

Aganais Caricæ, *Boisduval, Voy. de l'Astrolabe, Lép. pt.* I. *p.* 248.

Hypocrita Caricæ, *Hübner, Samml. Exot. Schmett.* I. *f.* 1–4.

Hypsa (Damalis) Caricæ, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 454.

a. b. c. ♂ ♂ ♀. Java. From Dr. Horsfield's Collection.

e. f. ♂ ♀. N. India. Presented by Col. Buckley.

g. h. i. j. ♂ ♀. Canara. Presented by S. N. Ward, Esq.

The larva and pupa of *Hypsa Alciphron* are figured on Plate XIII., figs. 6, 6*a*, from Java. "Feeds on a species of *Ficus*, bearing the native name of *Luwing*. December to February. Rather common. Cocoon slight, affixed to a leaf."—(Horsfield, MS.)

670. *HYPSA EGENS, Walker.*

Hypsa (Damalis) egens, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 453 (1854).

a. b. c. d. ♂ ♀, and pupæ. Java. From Dr. Horsfield's Collection.

e. ♀. Penang. Presented by Dr. Cantor.

f. ♀. Bootan. From Pemberton's Collection.

The larva and pupa of *Hypsa egens* are figured on Plate XIII., figs. 7, 7*a*, from Java. "Feeds on a species of *Ficus*, bearing the native name of *Pre.* March."—(Horsfield, MS.)

671. *HYPSA FICUS, Fabricius Sp.*

Noctua Ficus, *Fabricius, Ent. Syst.* III. *p.* 27 (1793).

Hypsa (Lacides) Ficus, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 456.

Damalis Ficus, *Hübner, Verz. bek. Schmett. p.* 172.

Phalæna-Attacus Alciphron, *apud Cramer, Pap. Exot.* III. *pl.* 262, *f. A. B.* (*nec. pl.* 133, *f. E.*).

a. b. c. ♂ ♀. N. India. Presented by Col. Hearsey.

d. e. f. ♂ ♀. Canara. Presented by S. N. Ward, Esq.

The larva of *Hypsa Ficus* is figured on Plate XIII., figs. 8, 8*a*, copied from the original drawing made by Lady Isabella Rose Gilbert.

672. *HYPSA HELICONIA, Linnæus Sp.*

Phalæna-Noctua Heliconia, *Linnæus, Syst. Nat.* I. II. *p.* 839 (1767); *Mus. Lud. Ulr. p.* 384.

Hypsa (Aspa) Heliconia, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 452.

Hypsa Heliconia, *Hübner, Verz. bek. Schmett. p.* 172.

a. ♀. N. India. From Mr. Argent's Collection.

673. *HYPSA SILVANDRA, Cramer Sp.*

Phalæna-Bombyx Silvandra, *Cramer, Pap. Exot.* IV. *p.* 155, *pl.* 369. *f. D.* (1782).

Hypsa Silvandra, *Hübner, Verz. bek. Schmett. p.* 172.

Hypsa (Hypsa) Silvandra, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 450.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. ♂. Penang. Presented by Dr. Cantor.

374. *HYPSA MONYCHA, Cramer Sp.*

Phalæna-Attacus Monycha, *Cramer, Pap. Exot.* II. *p.* 52, *pl.* 131, *f. C.* (1779).

Hypsa (Hypsa) Monycha, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 451.

a. b. ♂ ♀. Cherra Poonjee. Presented by Colonel Buckley.

675. *HYPSA PLANA, Walker.*

Hypsa (Hypsa) plana, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 450 (1854).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva and pupa of *Hypsa plana* are figured on Plate XIII., figs. 9, 9*a*, from Java. "Feeds on a species of *Ficus*, bearing the native name of *Luwing*. January, abundant, but scarce after that month."—(Horsfield, MS.)

Genus PHILONA, *Walker.*

Hypsa (Philona), *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 456 (1854).

676. *PHILONA INOPS, Walker.*

Hypsa (Philona) inops, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 457 (1854).

a. Java. From Dr. Horsfield's Collection.

b. Silhet. Presented by the Trustees of the British Museum.

c. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus NEOCHERA, *Hübner.*

Neochera, *Hübner, Verz. bek. Schmett. p.* 173 (1816).

Hypsa (Neochera), *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 448.

677. *NEOCHERA DOMINIA, Cramer Sp.*

Phalæna-Bombyx Dominia, *Cramer, Pap. Exot.* III. *p.* 123, *pl.* 263, *f. A. B.* (1782).

Neochera Dominia, *Hübner, Verz. bek. Schmett. p.* 173.

Hypsa (Neochera) Dominia, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 418.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. f. g. ♂ ♀. Cherra Poonjee. Presented by Colonel Buckley.

678. *NEOCHERA BHAWANA, Moore* (*Pl.* VII*a*, *fig.* 4).

Neochera Bhawana, n. sp.—Male, dark slate-colour, glossed with steel-blue; hind-wings darkest. *Fore-wing* with all the veins white, those terminating on the exterior margin with bifid tips; an orange-yellow spot containing a black dot at the base. *Hind-wing* with an indistinct black discal spot; the lower veins entirely, and tips of all, and ciliæ white. Antennæ brown; palpi and head black, with some white about the base of antennæ and collar; thorax beneath white, spotted with black; thorax above and abdomen above and beneath orange-yellow, palest on the abdomen; thorax above with eight black spots,—four in front, one on each side, and two along the middle; abdomen with a dorsal and two lateral rows of black spots. Legs black with white streaks. Expanse 2⅞ in.

a. b. ♂. Java. From Dr. Horsfield's Collection.

Genus EUPLOCIA, *Hübner.*

Euplocia, *Hübner, Verz. bek. Schmett. p.* 172 (1816).

Hypsa (Euplocia), *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 417.

679. *EUPLOCIA MEMBLIARIA, Cramer Sp.*

Phalæna-Bombyx Membliaria, *Cramer, Pap. Exot.* III. *p.* 139, *pl.* 269, *f. C. D.* (1782).

Euplocia Membliare, *Hübner, Verz. bek. Schmett. p.* 172.

Hypsa (Euplocia) Membliaria, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 418.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus TIGRIDOPTERA, *Herr. Schäffer.*

TIGRIDOPTERA, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *p.* 69 (1856).

680. *TIGRIDOPTERA EXUL, Herr. Schäffer.*

Tigridoptera exul, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *p.* 69, *f.* 533 (1856).

Female, pale silvery-grey. *Fore-wing* with two basal and three discal transverse series of black dots, a streak from the base extending along the posterior margin, and a shorter streak in the middle of the disc, orange-yellow; *hind-wing* with three discal series of black dots, extending from the middle of anterior to abdominal margin; two orange-yellow streaks, one parallel with abdominal margin, the other along the disc. Antennæ, front of head, hind part of thorax above, and wholly beneath, and legs pale grey; top of head, front of thorax, and abdomen orange-yellow; thorax with six black dots; wings beneath grey, each with a black discal dot. Expanse $2\frac{3}{8}$ in.

a. ♀. Java. From Dr. Horsfield's Collection.

Genus ANAGNIA, *Walker.*

HYPSA (ANAGNIA), *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 446 (1854).

HYPSA (PERIDROME*), *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 444 (1854).

AGANOPIS, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 72, *f.* 501, 502 (1856).

681. *ANAGNIA SUBFASCIA, Walker.*

Hypsa (Anagnia) subfascia, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 446 (1854).

a. ♂. Silhet. Presented by the Trustees of the British Museum.

b to *d*. ♂ ♀. Cherra Poonjee. Presented by Colonel Buckley.

682. *ANAGNIA ORBICULARIS, Walker* (*Pl.* VII*a*, *fig.* 5, ♀).

♂ ♀ Hypsa (Peridrome) orbicularis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 445 (1854).

* Previously used by Hübner in 1816.

♂ Aganopis subquadrata, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 72, *f.* 501–2 (1856).

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

c. ♂. Cherra Poonjee. Presented by Col. Buckley.

d. e. N. India. From Mr. Argent's Collection.

The larva and pupa of *Anaphia orbicularis* are figured on Plate XIII., figs. 10, 10*a*, from Java. "Found on the southern hills on a species of *Apocinum* (?). January. Scarce."—(Horsfield, MS.)

Cocoon covered with particles of leaves, lichens, &c.

Genus PANGLIMA, *Moore.*

Antennæ simple.

Palpi ascending, much longer than the head; second and third joints of equal length; the third joint linear, compressed and slightly clavate laterally.

Legs broken off.

Fore-wings very long, nearly oval.

Hind-wings somewhat triangular, one-third less in length.

683. *PANGLIMA NARCISSA, Cramer Sp.*

Phalæna-Bombyx Narcissus, *Cramer, Pap. Exot.* I. *p.* 116, *pl.* 73, *f. E. F.* (1779).

Hypsa Narcissus, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 458.

Noctua Narcissus, *Fabricius, Ent. Syst.* II. III. *p.* 20.

a. Chusan. Presented by Dr. Cantor.

Genus DIGAMA, *Moore.*

Antennæ of the male broadly bipectinated; of the female, filiform.

Palpi ascending, longer than the head, covered with minute scales; second joint twice the length of the first; third joint long, slender.

Legs covered with minute scales.

Abdomen slender, extending beyond the hind-wings.

Fore-wings long; anterior margin nearly straight; exterior margin (in the male) oblique, rounding to near base of posterior margin, where there is a short longitudinal raised fold; (in the female) straighter, and the raised fold sometimes obsolete.

Hind-wings somewhat rounded.

684. *DIGAMA HEARSEYANA, Moore* (*Pl.* VII*a*, *fig.* 3 ♂, 3*a* ♀).

Digama Hearseyana, n. sp.—Male, *fore-wing* pale greyish-brown, with darker blotches, and having several black basal dots; *hind-wing* testaceous-yellow, with a small brown mark on middle of exterior margin; antennæ brown; palpi testaceous-yellow, first and second joint with a black spot, third joint tipped with black; head and thorax pale greyish-brown, with some black dots; abdomen testaceous, with a dorsal row of black dots; legs yellowish, with dark bands. Female, *fore-wing* dark greyish-brown, more or less mottled with grey, with black basal dots; *hind-wing* without the brown mark; palpi, head, and thorax dark greyish-brown, the black dots indistinct; fore and mid-legs darker than in the male, and the bands less distinct. UNDER-SIDE of both sexes with a black discal dot. Expanse of male $1\frac{2}{10}$ in., of female $1\frac{3}{12}$ in.

a. b. ♂ ♀. Canara. Presented by S. N. Ward, Esq.
c. ♂. Ceylon. From Jonville's Collection.
d. e. f. g. ♀. N. India. Presented by General Hearsey.
h. ♀. Dukhun. Presented by Col. Sykes.

Genus MACROBROCHIS, *Herr. Schäffer.*

MACROBROCHIS, *Herr. Schäffer, Lep. Exo.. Spec. Nov. p.* 72, *f.* 531, (1856).
LITHOSIA, *pt. Walker.*
ISARES, *Boisduval, MS.*

685. *MACROBROCHIS GIGAS, Walker Sp.*

Lithosia gigas, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 494 (1854); *pt.* VII. *p.* 1681.
Macrobrochis interstitialis, *Herr. Schäffer, Lep. Exot. Spec. Nov. f.* 531, *p.* 72 (1856).
Isares huma, *Boisduval, MS.*

a. b. c. ♂ ♀. Cherra Poonjee. Presented by Colonel Buckley.

Genus TRIPURA, *Moore.*

Antennæ filiform, slightly ciliated.
Palpi ascending, covered with minute hairy scales third joint short, conical.

Proboscis of moderate length.

Legs covered with minute scales.

Abdomen moderately slender, extending beyond the hind-wings.

Fore-wings long; anterior margin slightly convex; exterior margin oblique, rounding to base of posterior margin.

Hind-wings somewhat trigonate, anal angle rather truncated.

686. *TRIPURA PRASENA, Moore* (*Plate* VIIa, *fig.* 6).

Tripura Prasena, n. sp.—Dull white; *fore-wing*, with the veins, and broadly along the costal and posterior margins, extremity of discoidal cell, and along the apex and ciliæ, dark purple-brown; *hind-wing*, with the apex and the veins from thence and ciliæ, purple-brown; antennæ, legs, tip of palpi above, head, thorax, and extremity of abdomen, metallic blue-green; base of abdomen, purple-brown; prothorax, palpi, and body beneath, yellow. Expanse 2¼ in.

a. b. N. India. Presented by Col. Buckley.

Genus VITESSA, *Moore.*

Antennæ minutely pectinated to two-thirds the length, tip filiform.

Palpi ascending, much longer than the head; first joint short, second and third joints of equal length; second joint thick, third joint linear.

Proboscis moderately long.

Legs covered with minute scales.

Abdomen long, attenuated at the base, with large tufted anal appendage.

Fore-wings long; anterior, exterior, and posterior margins nearly straight; exterior margin slightly oblique.

Hind-wings somewhat trigonate, anterior margin nearly straight, apex and exterior margin rounded.

687. *VITESSA SURADEVA, Moore* (*Plate* VIIa. *fig.* 7).

Vitessa Suradeva, n. sp.—Male, white; *fore-wing* yellow at the base, with four basal spots disposed in two transverse rows, a patch across the middle of the wing which incloses a white spot, and broadly along the veins to the exterior margin glossy black, *hind-wing*, with anterior margin narrowly and outer margin broadly, black; antennæ, third joint of palpi, and spots on the thorax, black; head, thorax, a large abdominal tuft, first and second joint of palpi, and

femur of anterior leg beneath, yellow; abdomen white, with black bands, that at the extremity being broad; legs black, spotted with white; ciliæ glaucous white. Expanse $1\frac{5}{8}$ in. to $1\frac{7}{8}$ in.

a. b. ♂. N. India. Presented by Col. Buckley.
c. d. ♂. N. India. From Mr. Argent's Collection.

Genus ATTEVA, *Walker.*

ATTEVA, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 526 (1854).

688. *ATTEVA BRUCEA, Moore* (*Plate* VII*a, fig.* 8).

Atteva Brucea, n. sp. — Golden-yellow; *fore-wing* above with numerous white spots, which vary much in size and shape; ciliæ white; *hind-wing* wholly golden-yellow; antennæ and head white; thorax with several white spots; legs brown, spotted with white; abdomen beneath spotted with white; UNDER-SIDE of wings wholly golden-yellow. Expanse $1\frac{1}{8}$ in.

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Atteva Brucea* are figured on Plate XIII., figs. 11, 11*a*, from Java. "Feeds on the *Trowalot* (*Brucea sumatrana*). December and January. Rather common."—(Horsfield, MS.)

Genus LYCLENE, *Moore.*

CYLLENE,* *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 513 (1854).

689. *LYCLENE ILA, Moore.*

Lyclene Ila, n. sp. — Female, *fore-wing* testaceous, with basal, apical, and broad transverse middle band, dark grey; *hind-wing* pale yellow, with indistinct transversely-curved narrow grey band; antennæ, head, and body testaceous; thorax dotted with black. Expanse $\frac{7}{10}$ in.

a. ♀. Canara. Presented by S. N. Ward, Esq.

690. *LYCLENE LUTARA, Moore.*

Lyclene Lutara, n. sp.—Male, *fore-wing* pale testaceous, with basal dots, a transverse irregular cross-band, followed by a transverse zigzag line, a discal dot, and two submarginal rows of dots, blackish; *hind-*

* Previously used in *Coleoptera* by Mr. Newman

wing yellowish; antennæ, head, and thorax pale testaceous; thorax with two black dots; abdomen yellowish, with large blackish anal tuft; legs spotted with white. Female without the dark anal tuft. Expanse $\frac{7}{10}$ in. to $\frac{8}{10}$ in.

a. b. c. d. ♂ ♀, and pupa. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Lycæne Lutara* are figured on Plate XIII., figs 12, 12*a*, from Java. "Feeds on the *Wijin* (*Solanum indicum*). Common in January."—(Horsfield, MS.)

Genus BARSINE, *Walker.*

Barsine, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 546 (1854).

Ammatho, *Walker*, id. *pt.* III. *p.* 759 (1855).

Hypocrita, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 138 (1855).

Hypoprepia, *pt. Walker.*

691. *BARSINE DEFECTA, Walker.*

Barsine defecta, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 546 (1854).

Ammatho cuneonotatus, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 759 (1855).

a. Java. From Dr. Horsfield's Collection.

b. c. d. e. f. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

692. *BARSINE DELINEATA, Walker.*

Hypoprepia delineata, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 487 (1854).

Ammatho figuratus, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 759 (1855).

Hypocrita rhodina, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 138 (1855).

a. Chusan. Presented by Dr. Cantor.

693. *BARSINE LINGA, Moore.*

Barsine Linga, n. sp.—Testaceous-white; *fore-wing*, with the base of costal margin, three spots at the extreme base of the wing and two

"transverse basal rows of longitudinal dots, and along all the veins from the apical third of the wing to the exterior margin, black; body pale testaceous; legs yellowish, with indistinct black spots. Expanse $1\frac{1}{2}$ in.

a. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

694. *BARSINE SENARA, Moore.*

Barsine Senara, n. sp.—Male, pale testaceous; *fore-wing* with indistinct transverse cross-band; near the base, and oblique maculated apical band, grey. Expanse $\frac{10}{12}$ in.

a. ♂. Java. From Dr. Horsfield's Collection.

Genus CYANA, *Walker.*

CYANA, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 528 (1854).

695. *CYANA DETRITA, Walker.*

Cyana detrita, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 529 (1854).

a. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus NEPITA, *Moore.*

PITANE,* *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 531 (1854).

696. *NEPITA LUNILA, Moore.*

Pitane Lydia, *apud Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 532 (1854).

? Lithosia Lydia, *Donovan, Epit. Ins. New Holl. pl. Boisduval, Voy. de l'Astrolabe, Lép. pt.* I. *p.* 211.

a. *b*. Dukhun. Presented by Col. Sykes.

c. Canara. Presented by S. N. Ward, Esq.

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* This name was previously used by Mr. Walker. (Nr. List Lep. Het. B. M. pt. II. p. 462.)

Genus SETINA, *Schrank.*

SETINA, *Schrank, Faun. Boica,* II. *pt.* II. *p.* 165 (1802). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 514.

CYBOSIA *et* ENDROSA, *Hübner, Verz. bek. Schmett. p.* 167 (1816).

PHILEA, *Dalman, Zett. Ins. Lapp. p.* 931 (1823).

TINEA, *pt. Linnæus.*

CALLIMORPHA, *pt. Latreille.*

LITHOSIA, *pt. Fabricius.*

697. *SETINA SINENSIS, Walker.*

Setina sinensis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 520 (1854).

a ♀. Chusan. Presented by Dr. Cantor.

698. *SETINA DASARA, Moore.*

Setina Dasara, n. sp.—Male, pale testaceous; *fore-wing* with a black dot at the base, an indistinct pale grey irregular patch from near the base to near the apex, with a darker narrow longitudinal discal dot; *hind-wing* pale yellow, semihyaline; antennæ, head, and thorax pale testaceous; thorax with black dots; abdomen pale grey; thorax beneath and legs pale yellow; tarsi with brown tips. Female paler, and without the grey patch, but with a black discal dot.

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus LITHOSIA, *Fabricius.*

LITHOSIA, *Fabricius, Ent. Syst. Suppl. p.* 459 (1798). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 493.

PHALÆNA, *sect.* NOCTUA, *pt. Linnæus.*

SETINA, *pt. Schrank.*

CALLIMORPHA, *pt. Latreille.*

ŒONISTIS, PELOSIA, EILEMA, *Hübner, Verz. bek. Schmett. p.* 165 (1816).

699. *LITHOSIA ENTELLA, Cramer Sp.*

Phalæna-Tinea Entella, *Cramer, Pap. Exot.* III *p.* 27, *pl.* 208, *f. D.* (1782).

Lithosia Entella, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 495.

Œonistis Entelliola, *Hübner, Verz. bek. Schmett. p.* 165.

Noctua Delia, *Fabricius, Ent. Syst.* III. 2, 25 (1793). *Donovan, Epit. Ins. New Holl. pl.*

Lithosia Delia, *Boisduval, Voy. de l'Astrolabe, pt.* I. *Lép. p.* 209.

a. N. India. Donor unknown.

700. *LITHOSIA SAMBARA, Moore.*

Lithosia Sambara, n. sp.—Fore-wing pale testaceous; *hind-wing* paler; antennæ and legs yellow; palpi tipped with black above. Expanse 1½ in.

a. ♀. Java. From Dr. Horsfield's Collection.

701. *LITHOSIA VAGESA, Moore.*

Lithosia Vagesa, n. sp.—Pale testaceous; antennæ, tip of palpi, and legs black. Expanse 1⅝ in.

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

702. *LITHOSIA NATARA, Moore.*

Lithosia Natara, n. sp.—Fore-wing pale testaceous-grey, with pale testaceous costal band; *hind-wing* pale yellow; antennæ brown; head, prothorax, abdomen, body beneath, and legs pale testaceous; thorax testaceous-grey. Expanse 1 in. to 1⅛ in.

a. b. c. d. Java. From Dr. Horsfield's Collection.

Allied to *Lithosia serva* (Walker, List Lep. Het. B. M. pt. II. p. 506), from Nepal.

703. *LITHOSIA PRABANA, Moore.*

Lithosia Prabana, n. sp.—Fore-wing grey, costal band and ciliæ pale testaceous; *hind-wing* wholly grey; body above grey; head, body beneath, and legs testaceous. Expanse ⅝ in. to ¾ in.

a. b. Java. From Dr. Horsfield's Collection.

704. *LITHOSIA BADRANA, Moore* (*Plate* VII*a, fig.* 9).

Lithosia Badrana, n. sp.—Fore-wing testaceous-yellow, with a broad grey discal patch containing a testaceous spot anteriorly; *hind-wing* pale yellow; antennæ, body, and legs testaceous-yellow; thorax with three grey dots. Expanse 1 in.

a. ♀. Java. From Dr. Horsfield's Collection.

Genus BIZONE, *Walker.*

Bizone, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 518 (1851)
Deiopeia, *pt. Westwood.*

705. *BIZONE PUELLA, Drury Sp.*

Phalæna puella, *Drury, Exot. Ins.* II. *p.* 3, *pl.* 2, *f.* 2, *App. p.* ii. (1773).

Bizone puella, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 549.

Deiopeia puella, *Westwood, ed. Drury, Ins.* II. *p.* 3, *pl.* 2, *f.* 2.

a. b. c. d. e. f. ♂ ♀, and pupa. Java. From Dr. Horsfield's Collection.

The larva, pupa, and cocoon of *Bizone puella* are figured on Plate XIII., figs. 13, 13*a*, from Java. "Feeds on a species of *Muscus*, bearing the native name of *Lumut.* Common in January and February; scarce in March and April."—(Horsfield, MS.)

The cocoon is a beautiful net-like structure, and is formed solely of the hairs of the larva.

706. *BIZONE PITANA, Moore.*

Bizone Pitana, n. sp.—Female, pure white; *fore-wings* with three narrow pale red bands,—the first basal, the second zigzag, indented towards the base in its middle; the third waved, curved outwards; three black dots between the second and third bands. Expanse $1\frac{3}{8}$ in.

a. Java. From Dr. Horsfield's Collection.

707. *BIZONE BIANCA, Walker.*

Bizone Bianca, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1684 (1856).

a. N. India. Presented by Col. Buckley.

Remark.—The cocoon of *Bizone Bianca* is constructed exactly like that of *B. puella*, and is figured among the drawings in the collection of A. Grote, Esq.

708. *BIZONE PEREGRINA, Walker.*

Bizone peregrina, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 551 (1854).

a. Bombay. Presented by Ezra T. Downes, Esq.

709. *BIZONE ADITA, Moore* (*Plate* VII*a*, *fig.* 11).

Bizone Adita, n. sp.—Female, pure white; *fore-wings* with three narrow transverse pale red bands, the first basal, the second curved outwards, the third zigzag; two black dots between the second and third bands. Expanse 1½ in.

a. N. India. Presented by Col. Buckley.

710. *BIZONE ARAMA, Moore* (*Plate* VII*a*, *fig.* 10).

Bizone Arama, n. sp.—Female, pure white; *fore-wing* with four yellow bands, the first basal, the fourth subapical; three rather large black spots between the second and third bands; thorax banded with yellow; abdomen pinkish. Expanse 2 in.

a. b. c. d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus UTETHESIA, *Hübner*.

UTETHESIA, *Hübner, Verz. bek. Schmett. p.* 168 (1816).

DEIOPEIA, *Stephens, Ill. Brit. Ent. Haust.* II. *p.* 92 (1829). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 565.

TINEA, *pt. Linnæus.*

BOMBYX, *pt. Fabricius.*

LITHOSIA, *pt. Haworth, Duponchel, Guérin.*

EYPREPIA, *pt. Ochsenheimer.*

EULEPIA, *pt. Curtis.*

EUCHLLIA, *pt. Boisduval.*

EUPREPIA, *pt. Zeller*

711. *UTETHESIA PULCHELLA, Linn. Sp.*

Tinea pulchella, *Linnæus, Syst. Nat.* I. *pt.* II. *p.* 884 (1767). *Scopoli, Ent. Carn. p.* 208. *Sulzer, Ins.* II. *p.* 162, *pl.* 23, *f.* 11.

Deiopeia pulchella, *Stephens, Ill. Brit. Ent. Haust.* II. *p.* 93. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 566.

Bombyx pulchella, *Fabricius, Spec. Ins.* II. *p.* 203; *Mant. Ins.* II. *p.* 131; *Ent. Syst.* III. I. *p.* 179.

Lithosia pulchella, *Haworth, Lep. Brit. p.* 150.

Noctua pulchra, *Denis et Schiff. Wien. Verz. p.* 68.
Esper, Ausl. Schmett. IV. *p.* 570, *pl.* 164, *f.* 3–5.

Bombyx pulchra, *Borkhausen, Eur. Schmett.* III. *p.* 259.
Hübner, Bombyces, p. 128, *pl.* 26.

Lithosia pulchra, *Ochsenheimer, Schmett. von Eur.* III.
p. 304. *Guérin-Méneville, Icon. Règ. An. pl.* 88,
f. 8.

Utethesia pulchra, *Hübner, Verz. bek. Schmett. p.* 168.

Eulepia pulchra, *Curtis, Brit. Ent.* IV. *pl.* 169.

Euchelia pulchra, *Boisduval, Faun. Ent. Madag., etc.,*
p. 85.

Euprepia pulchra, *Zeller, Isis* (1847), *p.* 432.

Callimorpha pulchra, *Herr. Schäffer, Samml. Exot.*
Schmett. II. *p.* 151.

Phalæna-Geometra Lotris, *Cramer, Pap. Exot.* II. *p.* 20,
pl. 109, *f. E.* (1779).

a. o. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. Penang. Presented by Dr. Cantor.

f. g. ♂ ♀. N. India. Presented by Gen. Hearsey.

h. Darjeeling. From Messrs. Schlagintweit's Collection.

i. Canara. Presented by S. N. Ward, Esq.

The larva and pupa of *Utethesia pulchella* are figured on Plate XIV., figs. 1, 1*a*, from Java. "Feeds on a species of *Crotalaria*. January and February."—(Horsfield, MS.)

712. *UTETHESIA SEMARA, Moore* (*Plate* VII*a*, *fig.* 12).

Utethesia Semara, n. sp. — *Fore-wing* pale greyish-brown, with a narrow central cream-coloured streak from the base; a longitudinal series of narrow crimson spots along the costa and between the veins, intersected by black dots; exterior margin with a series of black dots: *hind-wing* white, with a broad pale brown border; antennæ black; thorax cream-colour, with black dots: abdomen white. Expanse of wings 1⅛ in.

a. b. c. Java. From Dr. Horsfield's Collection.

713. *UTETHESIA VENUSTA, Hübner.*

Utethesia venusta, *Hübner, Zutrüge, pt.* III. *p.* 29, *f.* 521 (1825).

Deiopeia venusta, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 568.

Euchelia formosa, *Boisduval, Faun. Ent. Madag., etc., p.* 85.

a. b. c. d. ♂ ♀. N. India. Presented by Colonel Buckley.

Genus ARGINA, *Hübner.*

Argina, *Hübner, Verz. bek. Schmett. p.* 167 (1816).
Deiopeia, *pt. Walker.*

714. *ARGINA ASTREA, Drury Sp.*

Phalæna-Noctua Astrea, *Drury, Exot. Ins.* II. *p.* 11. *pl.* 6, *f.* 3; *App. p.* ii. (1773). *Olivier, Enc. Méth.* VIII. *p.* 261.

Deiopeia Astrea, *Westwood, ed. Drury's Exot. Ins.* II. *p.* 13, *pl.* 6, *f.* 3. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 570.

Phalæna-Geometra cribraria, *Cramer, Pap. Exot.* III. *p.* 27, *pl.* 208, *f. C. G.* (1782).

Phalæna-Geometra cribrata, *Gmelin, Syst. Nat.* I. 5, *p.* 2482.

Phalæna-Bombyx Pylotis, *Fabricius, Ent. Syst.* III. I. *p.* 479 (1797). *Gmelin, Syst. Nat.* I. V. *p.* 2410. *Cleric, Icones, pl.* 54, *f.* 4.

Argina Pylotis, *Hübner, Verz. bek. Schmett. p.* 167.

Euchelia Pylotis, *Boisduval, Faun. Ent. Madag., etc., p.* 85.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. ♂. Bootan. From Pemberton's Collection.

f. g. ♂ ♀. N. India. Presented by Gen. Hearsey.

The larva and pupa of *Argina Astrea* are figured on Plate XIV., figs. 2, 2*a*, copied from an original drawing in the possession of J. O. Westwood, Esq.

715. *ARGINA DULCIS, Walker Sp.*

Deiopeia dulcis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 569 (1854).

Phalæna-Geometra cribraria, var., *Cramer, Pap. Exot.* III. *p.* 172, *pl.* 288, *f. D.*

a. b. c. ♂ ♀. Canara. Presented by S. N. Ward, Esq.

716. *ARGINA ARGUS, Kollar Sp.*

Euprepia Argus, *Kollar, in Hügel's Kaschmir,* IV. *pt.* II. *p.* 467, *pl.* 21, *f.* 3 (1844).

Deiopeia Argus, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 572.

a. Java. From Dr. Horsfield's Collection.

b. c. d. e. ♂ ♀. N. India. Presented by Colonel Buckley.

f. g. h. i. ♂ ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva and pupa of *Argina Argus* are figured on Plate XIV., figs. 3, 3*a*, from Java. "Feeds on the *Orrok-orrok* (*Crotalaria obtusifolia*). Abundant in January, February, and March." — (Horsfield, MS.)

717. *ARGINA SYRINGA, Cramer Sp.*

Phalæna-Geometra Syringa, *Cramer, Pap. Exot.* I. *p.* 8, *pl.* 5, *f. C. D.* (1779).

Deiopeia Syringa, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 572.

Bombyx Crotalariæ, *Fabricius, Ent. Syst.* II. *p.* 473. *Olivier, Enc. Méth.* V. *p.* 94.

Argina Crotalaria, *Hübner, Verz. bek. Schmett. p.* 167.

a. b. c. ♂ ♀. N. India. Presented by Col. Buckley.

Remark.—Some of the genera of this section (as *Eulepia gramitica, Bizone, Utethesia,* and *Argina*) should, perhaps more properly, be arranged in the stirps having ursine larva. F. M.

Section III.

Larva of moderate length, either distinctly tuberculate and nearly naked, or subpilose, and having long filiform appendages on the anterior, or on *both* the anterior and posterior segments, together with dense dorsal tufts of short hairs on the middle segments. Metamorphosis.—Cocoon large, oval, with a dense outer covering, the interior consisting of a silken fabric. The perfect insect has the wings either long and trigonate, oval, or broad; the hind-wings in some are also long, being produced to a point at the apex: flies by day; antennæ broadly bipectinated in the male, more narrowly so in the female, and in some genera the females have the apex clavate; proboscis short; abdomen slender, in some females the ovipositor being exserted.

Sphinx (*sect.* 4, *pt.*), *Linnæus, S. N.* I. II. (1767).

Phalæna, *sect.* Attaci, *pt. Linnæus.*

Sphinges (*Larva G. pt.*), *Denis et Schiffermüller, Wien. Verz. p.* 43, (1776).

Sphinges, *pt. Hübner, Zuträge, p.* 4 (1818). *H. Doubleday, List Brit. Lep. p.* 3 (1850).

Zygænides, *pt. Latreille, Gén. Crust. et Ins.* IV. *pp.* 189, 211 (1809). *Boisduval, Ind. Méth. p.* 50 (1840). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 62 (1854).

Zygænidæ, *pt. Leach, Edinb. Encycl. p.* (1815). *Stephens, Ill. Brit. Ins. Haust.* I. *p.* 105 (1828); id. *Catal. Brit. Lep. Brit. Mus. p.* 24 (1850). *Stainton, Manual Brit. Lep. pp.* 75, 76 (1856).

Glaucopites, *pt. Newman, Entom. Mag.* II. *p.* 384 (1834); id. *Hist. of Ins. 2nd edit. p.* 213 (1841).

Anthroceridæ, *pt. Westwood, Introd.* II. *p.* 371 (1840).

Zygænites, *pt.* Procrites, Arctiites *et* Lithosiites, *pt. Blanchard, Hist. Nat. des Ins.* II. *pp.* 354, 362–3 (1845).

Lithosiidæ, *pt.* Ctenuchidæ, Melameridæ, Pericopidæ, Nyctemeridæ, Euschemidæ *et* Chalcosiidæ, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 279 (1854); id. *pt.* VII. *pp.* 1645–1668 (1856).

Hazidæ, *Guénée, Hist. Nat. des Lép.* X. (*Geometrites*), *p.* 188 (1857).

Zygænoidea, *pt. et* Syntomoidea, *Herr. Schäffer, Lep. Exot. Spec. Nov. pp.* 57, 72 (1858).

Pyrales, *pt. Newman, Sph. Vesp. pp.* 35, 36 (1832).

Genus PROCRIS, *Fabricius.*

PROCRIS, *Fabricius, Syst. Gloss.* (*Illiger's Mag.* IV. *p.* 289, 1807). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 105.
ATYCHIA, *Ochsenheimer, Schmett. von Eur.* II. *p.* 10 (1808).
INO, *Leach, Edinb. Encycl.* IX. *p.* 131 (1815).
AGLAOP[illegible], *Dalman, Sp. Nov. p.* 224 (1816).

718. *PROCRIS CHALA, Moore.*

Procris Chala, n. sp.—Smoky black; *fore-wings* with longitudinal and transverse narrow lines of pale metallic blue; *body* partially covered with pale metallic blue; *antennæ* and legs metallic purple. Expanse of wings $1\frac{1}{2}$ in.

a. b. Java. From Dr. Horsfield's Collection.

Genus HISTIA, *Hübner.*

HISTIA, *Hübner, Verz. bek. Schmett. p.* 198 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 411.
GYNAUTOCERA, *Guérin-Méneville, Mag. Zool. p.* 12 (1831). *Walker.*
ZYGÆNA, *pt. Fabricius.*

719. *HISTIA FLABELLICORNIS, Fabricius Sp.*

Zygæna flabellicornis, *Fabricius, Spec. Ins.* II. *p.* 163 (1781); *Mant. Ins.* II. *p.* 105; *Ent. Syst.* III. I. *p.* 398.

Histia flabellicornis, *Hübner, Verz. bek. Schmett. p.* 198. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 412.

Sphinx-Zygæna flabellicornis, *Gmelin, Syst. Nat.* I. V. 2396.

Papilio Rhodope, *Cramer, Pap. Exot. t.* I. *p.* 10, *pl.* 30, *f. E.* (1796).

a. b. c. d. Darjeeling. From Pearson's Collection.

720. *HISTIA PAPILIONARIA, Guérin Sp.*

Gynautocera Papilionaria, *Guérin-Méneville, Mag. Zool. p.* 12 (1831). *Westwood, Arcana Ent. p.* 20. *Walker, List Lep. Het. Brit. Mus. pt.* II *p.* 411.

a. b. c. ♂ ♀. N. India. Presented by Col. Buckley.

d. e. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

721. *HISTIA SELENE, Kollar Sp.*

Chalcosia Selene, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II. *p.* 463 (1844).

Histia Selene, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 413; id. *pt.* VII. *p.* 1668.

Gynautocera libelluloides, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. sér.* I. *pl.* 3, *f.* 11, 12 ♂, *f.* 13 ♀ (1853).

Histia vacillans, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 413 (1854); id. *pt.* VII. *p.* 1668.

a. b. ♀. Java. From Dr. Horsfield's Collection.

Genus POMPELON, *Walker.*

Pompelon, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 413 (1854).
Gynautocera, *pt. Guérin-Méneville.*

722. *POMPELON MARGINATA, Guérin Sp.*

Gynautocera marginata, *Guérin-Méneville, in Delessert's Voy. dans l'Inde, pt.* II. *p.* 83, *pl.* 25, *f.* 1 (1843).

Pompelon marginata, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 414; id. *pt.* VII. *p.* 1669.

Heterusia acrocyanea, *De Haan, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. *figs.* 157, 158, *p.* 79 (1854).

a. b. Java. From Dr. Horsfield's Collection.

c. Penang. Presented by Dr. Cantor.

Genus CYCLOSIA, *Hübner.*

Cyclosia, *Hübner, Verz. bek. Schmett. p.* 177 (1816).
Heleona, *Westwood, ed. Drury's Exot. Ins.*
Amesia, *Westwood, Arcana Ent. p.* 19 (1841).
Eyprgis, *Boisduval, in Herr. Schäffer's Lep. Exot. ser.* I. (1853).
Esthema, *pt. Hübner.*

723. *CYCLOSIA SANGUIFLUA, Drury Sp.*

Phalæna sanguiflua, *Drury, Exot. Ins.* II. *p.* 35, *pl.* 20, *f.* 1, 2; id. *App. p.* 2 (1773).

Cyclosia sanguiflua, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 415.

Callimorpha (Heleona) sanguiflua, *Westwood, ed. Drury's*

Ins. II. *p.* 37, *pl.* 20, *f.* 1, 2. *Royle's Himalaya, p.* 53.

Amesia sanguiflua, *Westwood, Arcana Ent. p.* 20.

Cyclosia Aliris, *E. Doubleday. Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 415 (1854).

a. b. Bootan. From Pemberton's Collection.

c. Cherra Poonjee. Presented by Col. Buckley.

724. *CYCLOSIA MIDAMA, Boisduval Sp.*

♂ Epyrgis Midama, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. *pl.* 2, *f.* 7 (1853).

Chalcosia Midama, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1670.

♀ Epyrgis Hormenia, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. *pl.* 2, *f.* 8.

Cyclosia venusta, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 416 (1854).

a. c. ♂. Cherra Poonjee. Presented by Colonel Buckley.

c. d. e. ♂ ♀. N. India. From Mr. Argent's Collection.

725. *CYCLOSIA PAPILIONARIS, Drury Sp.*

Phalæna-Noctua Papilionaris, *Drury, Exot. Ins.* II. *p.* 4, *pl.* 11, *f.* 4; id. *App. p.* 2 (1773).

Cyclosia Papilionaris, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 416.

Phalæna-Attacus Papilionaris, *Cramer, Pap. Exot.* I. *p.* 45, *pl.* 29, *f. A.*

Esthema Papilionaris, *Hübner, Verz. bek. Schmett. p.* 178.

Heleona Papilionaris, *Westwood, ed. Drury's Ins.* II. *p.* 4, *pl.* 11, *f.* 4.

Phalæna venaria, *Fabricius, Ent. Syst.* III. *pt.* II. *p.* 156.

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

c. ♀. Darjeeling. From Pearson's Collection.

d. e. f. g. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

726. *CYCLOSIA PANTHONA, Cramer Sp.*

Phalæna-Geometra Panthona, *Cramer, Pap. Exot.* IV. *p.* 68, *pl.* 322, *f. C.* (1782).

Cyclosia Panthona, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 417.

a. b., Bootan. From Pemberton's Collection.

Genus MILIONIA, *Walker.*

MILIONIA, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 364 (1854).
EPIDESMA, *pt. Hübner.*

727. *MILIONIA GLAUCA, Cramer Sp.*

Phalæna-Noctua glauca, *Cramer, Pap. Exot.* IV. *p.* 152, *pl.* 368, *f. D.* (1782).

Milionia glauca, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 365.

Epidesma Pyrrho, *Hübner, Verz. bek. Schmett. p.* 176 (1816).

a. b. c. d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

e. Silhet. From Mr. Argent's Collection.

728. *MILIONIA BASALIS, Walker.*

Milionia basalis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 365 (1854).

a. Java. From Dr. Horsfield's Collection.

729. *MILIONIA INTERCISA, Walker* (*Plate* VIII*a*, *fig.* 1).

Milionia intercisa, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 366 (1854).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus ERASMIA, *Hope.*

ERASMIA, *Hope, Trans. Linn. Soc.* XVIII. *p.* 116 (1840). *Westwood, Arc. Ent. p.* 19. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 418.

730. *ERASMIA PULCHELLA, Hope.*

Erasmia pulchella, *Hope, Trans. Linn. Soc.* XVIII. *p.* 446, *pl.* 31, *f.* 5. *Westwood, Arcana Ent. p.* 19. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 419.

a. b. c. Cherra Poonjee. Presented by Col. Buckley.

d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus CAMPYLOTES, *Westwood.*

Campylotes, *Westwood, in Royle's Ill. Nat. Hist. Himalaya, p.* 53 (1840); *Arcana Ent. p.* 20. *Walker.*

731. *CAMPYLOTES HISTRIONICUS, Westwood.*

Campylotes histrionicus, *Westwood, in Royle's Ill. Nat. Hist. Himal. p.* 53, *pl.* 10, *f.* 1 (1840); *Arcana Ent. p.* 20. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 420.

Chalcosia histrionica, *Kollar, in Hügel's Kaschmir,* IV. *pt.* II. *p.* 463.

a. b. c. d. N. India. Presented by Col. Buckley.

e. Darjeeling. From Messrs. Schlagintweit's Collection.

Genus CHALCOSIA, *Hübner.*

Chalcosia, *Hübner, Verz. bek. Schmett. p.* 173 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 420.

Milleria, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. (1853).

Gynautocera, *pt. Guérin-Méneville.*

Epyrgis, *pt. Boisduval, Herr. Schäffer.*

732. *CHALCOSIA PECTINICORNIS, Linn. Sp.*

Sphinx pectinicornis, *Linnæus, Syst. Nat.* I. II *p.* 807 (1767).

Chalcosia-Tiberina pectinicornis, *Hübner, Verz. bek. Schmett. p.* 173.

Chalcosia pectinicornis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 420; *pt.* VII. *p.* 1669.

Zygæna pectinicornis, *Fabricius, Syst. Ent. p.* 554; *Spec. Ins.* II. *p.* 164; *Mant. Ins.* II. *p.* 105; *Ent. Syst.* III. I. *p.* 399.

Gynautocera pectinicornis, *Guérin-Méneville, in Delessert's Voy. dans l'Inde, pt.* II. *p.* 80, *pl.* 21, *f.* 4.

Epyrgis idmoides, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* 1. *pl.* 1, *f.* 6, *p.* 78 (1853).

a. b. Bootan. From Pemberton's Collection.

c. N. India. Presented by Col. Buckley.

d. e. f. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva and cocoon of *Chalcosia pectinicornis* are figured on Plate XIV., figs. 4, 4*a*, copied from the original drawing made by Lady Isabella Rose Gilbert. "Larvæ found July 24th, changed to pupa on the 26th and 27th, the perfect moths emerging on the 7th and 8th August."—(Lady Gilbert's MS. Notes.)

733. *CHALCOSIA TIBERINA, Cramer Sp.*

Phalæna-Bombyx Tiberina, *Cramer, Pap. Exot.* 1. *p.* 52, *pl.* 32, *f. D.* (1779). *Edwards's Nat. Hist. of Birds, pl.* 226.

Chalcosia Tiberina, *Hübner, Samml. Exot. Schmett.* I. *f.* 1–4. *Kollar, in Hügel's Kaschmir,* IV. *pt.* II. *p.* 461. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 422.

a. N. India. Presented by the Trustees of the British Museum.

734. *CHALCOSIA ADALIFA, Doubleday.*

Chalcosia Adalifa, *E. Doubleday, MS. Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 421 (1854).

a. b. N. India. Presented by the Trustees of the British Museum.

735. *CHALCOSIA VENOSA, Walker.*

Chalcosia venosa, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 422 (1854).

a. Ceylon. From M. E. Jonville's Collection.

736. *CHALCOSIA CORRUSCA, Boisduval Sp.*

Milleria corrusca, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. *pl.* 1, *f.* 1 (1853).

Chalcosia corrusca, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1670.

Chalcosia Zuleika, *E. Doubleday, MS. Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 423 (1854).

a. Silhet. Presented by the Trustees of the British Museum.

737. *CHALCOSIA PHALÆNARIA, Guérin Sp.*

Gynautocera Phalænaria, *Guérin-Méneville, in Delessert's Voy. dans l'Inde, pt.* II. *p.* 84, *pl.* 24, *f.* 1 (1843).

Chalcosia Phalænaria, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 421; *pt.* VII. *p.* 1670.

Chalcosia pulchella, *Kollar, in Hügel's Kaschmir,* IV. *pt.* II. *p.* 461 (1844).

Heterusia pulchella, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 160, 161.

a. b. c. d. e. Java. From Dr. Horsfield's Collection.

Genus PIDORUS, *Walker.*

Pidorus, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 424 (1854).
Zygæna, *pt. Fabricius.*

738. *PIDORUS GLAUCOPIS, Drury Sp.*

Phalæna-Bombyx Glaucopis, *Drury, Exot. Ins.* II. *p.* 11, *pl.* 6, *f.* 1; *App. p.* 11 (1773). *Cramer, Pap. Exot.* IV. *p.* 68, *pl.* 322, *f. D.*

Pidorus Glaucopis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 424.

Zygæna Glaucopis, *Fabricius, Spec. Ins.* II. *p.* 164; *Mant. Ins.* II. *p.* 105; *Ent. Syst.* III. I. *p.* 100.

Callimorpha Glaucopis, *Westwood, ed. Drury's Exot. Ins.* II. *p.* 14, *pl.* 6, *f.* 4.

a. b. c. ♂ ♀. Darjeeling. From Messrs. Schlagintweit's Collection.

739. *PIDORUS ZELICA, Doubleday Sp.*

Chalcosia Zelica, *E. Doubleday, MS.*

Pidorus Zelica, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 425 (1854).

a. N. India. Presented by the Trustees of the British Museum.

Genus LAURION, *Walker.*

LAURION, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 426 (1854).

EPIDESMA, *pt. Hübner.*

MILLERIA, *pt. Boisduval, Herr. Schäffer.*

740. *LAURION CIRCE, Boisduval Sp.*

Milleria Circe, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. *pl.* 1, *f.* 2 (1853).

Laurion Circe, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1671.

Laurion metallica, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 426 (1854).

a. b. c. Cherra Poonjee. Presented by Col. Buckley.

741. *LAURION GEMINA, Walker.*

Laurion gemina, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 427 (1854).

a. b. c. Java. From Dr. Horsfield's Collection.

d. N. India. Presented by the Trustees of the British Museum.

Genus CHELURA, *Hope.*

CHELURA, *Hope, Trans. Linn. Soc.* XVIII. *p.* 444 (1840). *Westwood, Arc. Ent. p.* 20. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 436.

742. *CHELURA BIFASCIATA, Hope.*

Chelura bifasciata, *Hope, Trans. Linn. Soc.* XVIII. *p.* 444 (1840). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 437.

a. Nepal. Presented by the Trustees of the British Museum.

Genus ETERUSIA, *Hope*.

Eterusia, *Hope, Trans. Linn. Soc.* XVIII. *p.* 445 (1840). *Westwood, Arcana Ent. p.* 19. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 427.

Heterusia, *Boisduval, E. Doubleday.*

743. *ETERUSIA TRICOLOR, Hope.*

Eterusia tricolor, *Hope, Trans. Linn. Soc.* XVIII. *p.* 445, *pl.* 31, *f.* 4 (1840). *Westwood, Arcana Ent. p.* 19. *E. Doubleday, Zoologist,* II. *p.* 470. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 428.

a. ♂. Penang. Presented by Dr. Cantor.

b. ♀. Cherra Poonjee. Presented by Col. Buckley.

744. *ETERUSIA SCINTILLANS, Boisduval.*

Heterusia scintillans, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. *f.* 154–155 (1854).

Eterusia scintillans, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1671.

Eterusia sublutea, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 430 (1854).

a. ♂. Silhet. Presented by the Trustees of the British Museum.

745. *ETERUSIA EDOCLA, Doubleday.*

Heterusia Edocla, *E. Doubleday, Zoologist,* II. *p.* 469.

Eterusia Edocla, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 428.

a. N. India. From Capt. Harrington's Collection.

b. Silhet. Presented by the Trustees of the British Museum.

746. *ETERUSIA ÆDEA, Linnæus Sp.*

Papilio Ædea, *Linnæus, Syst. Nat.* II. *p.* 757 (1767); *Amœn. Acad.* VII. *p.* 403. *Clerck, Icones, pl.* 4, *f.* 2. *Fabricius, Spec. Ins.* II. *p.* 32; *Mant. Ins.* II. *p.* 16; *Ent. Syst.* III. *p.* 173.

Eterusia Ædea, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 428.

Acræa Ædea, *Godart, Enc. Méth.* IX. *p.* 236.

Heterusia Ædea, *E. Doubleday, Zoologist*, II. *p.* 469, *fig.*

a. ♂. Ceylon. From M. Jonyille's Collection.

b. Silhet. Presented by the Trustees of the British Museum.

747. *ETERUSIA RAJA, Moore* (*Plate* VIIIa, *fig.* 2).

Eterusia Raja, n. sp.—Female, *fore-wing* green, tinged with golden-yellow, a nearly transverse oblique black-bordered yellow band from the middle of the costa; *hind-wing* golden-yellow, with the veins, a narrow exterior margin, and a curved submarginal band, black; abdominal margin broadly greenish-blue; antennæ blue, slightly bipectinated, and clavate at the tip; head and thorax above green, with a narrow crimson collar; abdomen blue; face, body, and legs beneath pale yellow.

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

748. *ETERUSIA RISA, Doubleday.*

Heterusia Risa, *E. Doubleday, Zoologist*, II. *p.* 468.

Eterusia Risa, *Walker, List Lep. Het. Brit. Mus. p.* II. *p.* 429.

a. Penang. Presented by Dr. Cantor.

749. *ETERUSIA DISTINCTA, Guérin Sp.*

Gynautocera distincta, *Guérin-Méneville, in Delessert's Voy. dans l'Inde, pt.* II. *p.* 85, *pl.* 21, *f.* 3 (1843).

Chalcosia distincta, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 423.

a. *b*. *c* Java. From Dr. Horsfield's Collection.

750. *ETERUSIA PULCHELLA, Walker.*

Eterusia pulchella, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 431 (1854).

a. *b*. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

751. *ETERUSIA SEXPUNCTATA, Doubleday.*

Heterusia sexpunctata, *E. Doubleday, MS.*

Eterusia sexpunctata, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 432 (1854).

a. N. India. From Capt. Harrington's Collection.

752. *ETERUSIA FERREA, Walker.*

Eterusia ferrea, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 431 (1854).

a. Java. From Dr. Horsfield's Collection.

753. *ETERUSIA DRATARAJA, Moore* (*Plate* VIII*a*, *fig.* 3).

Eterusia Drataraja, n. sp.—Male, black; *fore-wing* with two transverse curved narrow bands, and along all the veins and veinlets dull ferruginous; *hind-wing* with three lengthened streaks from the base, and three angular submarginal spots ferruginous; antennæ black, bipectinated; body black; collar, spot on each shoulder, and two narrow lines down the thorax, and narrow abdominal bands ferruginous; legs and body beneath pale yellow. Expanse of wings 1½ in.

a. Java. From Dr. Horsfield's Collection.

Genus PINTIA, *Walker.*

Pintia, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 280 (1854).

754. *PINTIA METACHLOROS, Walker* (*Pl.* VIII*a*, *fig.* 4 ♂, 4*a* ♀).

♂ Pintia metachloros, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 281 (1854).

a. b. c. d. e. f. g. ♂ ♀. Java. From Dr. Horsfield's Collection.

Pintia metachloros. — Female, bluish-green; *fore-wing* with a slightly oblique broad white band, and a row of minute subapical white dots; *hind-wing* white, with broad purple-brown exterior border; body and antennæ as in male. Expanse of male 1¾ in., of female 2⅛ in.

The larva and cocoon of *Pintia metachloros* are figured on Plate XIV. figs. 5, 5*a*, from Java. "Feeds on the *Jack*. April." (Horsfield, MS.)

Genus TRYPANOPHORA, *Kollar*.

TRYPANOPHORA, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II. *p.* 457 (1844). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 3.

755. *TRYPANOPHORA SEMIHYALINA, Kollar.*

♀ Trypanophora semihyalina, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II. *p.* 457, *pl.* xix. *f.* 1 (1844). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 434. *Moore, P. Z. S.* (1859), *p.* , *pl.* , *figs.* 1, 2, ♂ ♀.

♀ Syntomis humeralis, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1593 (1856).

a. b. ♂ ♀. N. India. From the Asiatic Society of Bengal.

c. d. ♀. N. India. Presented by Col. Buckley.

Remark.—M. Kollar's description and figure of *Tryp. semihyalina* applies to the female only. The male differs in having the antennæ thickly bipectinated (this in the female being minutely bipectinated and slightly clavate at the tip); the wings are narrower, the hyaline spots of the fore-wing less in size, and the two near the posterior angle are covered with ochreous scales; the entire disc of the hind-wing is hyaline.

The larva of *Tryp. semihyalina* is figured in Plate XIV. fig. 6, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on *Raphis lepis*."—(Grote, MS. Note.)

The transformations of this interesting species were also observed by Gen. Hardwicke, and are figured in vol. 10999, fig. 181, and vol. 11001, figs. 23, 26, and 90 of his original drawings, now in the Library of the British Museum.

Genus SYNTOMIS, *Ochsenheimer*.

SYNTOMIS, *Ochsenheimer, Schmett. von Eur.* II. *p.* 103 (1807). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 117 (1854).

AMATA, *Fabricius, Syst. Gloss.* (*Illiger's Mag.* VI. *p.* 289).

CHRYSAORES EXCELSÆ SYNTOMES, *et* CŒNOCHROMIA, *et* EUTOMES, *Hübner, Verz. bek. Schmett.* (1819).

SPHINX, *pt. Linnæus.*

ZYGÆNA, *pt. Fabricius*

756. *SYNTOMIS FENESTRATA, Drury Sp.*

Sphinx fenestrata, *Drury, Ill. Nat. Hist.* II. *p.* 50, *pl.* 28, *f.* 5 ( ).

Syntomis fenestrata, *Boisduval, Monogr. Zyg. p.* 124, *pl.* 8, *f.* 1. *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 124. *Herr. Schäffer, Lep. Exot. Spec. Nov. scr.* I. *f.* 270, *p.* 72.

Zygæna fenestrata, *Fabricius, Spec. Ins.* II. *p.* 160; *Mant. Ins.* II. *p.* 103; *Ent. Syst.* III. I. *p.* 392.

Sphinx-Zygæna fenestrata, *Gmelin, Syst. Nat.* I. V. *p.* 2394.

a. China. Presented by Dr. Cantor.

757. *SYNTOMIS SCHŒNERRHI, Boisduval.*

Syntomis Schœnerrhi, *Boisduval, Monogr. Zyg. p.* 112, *pl.* 7, *f.* 1 (1829). *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 120.

Syntomis bicincta, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II. *p.* 460, *pl.* 19, *f.* 8 (1844).

a. b. c. Darjeeling. From Messrs. Schlagintweit's Collection.

758. *SYNTOMIS MARSDENI, Moore.*

Syntomis Marsdeni, *Moore, P. Z. S.* (1859), *p.* *pl.* , *fig.* .

a. b. Java. From Dr. Horsfield's Collection.

Syntomis Marsdeni, n. sp. — Blackish-brown; *fore-wing* with five whitish transparent spots,—one within discoidal cell, two on posterior margin, and two near the apex; *hind-wing* with yellowish base, and small whitish transparent discal spot; front of head, collar, shoulders, and abdominal bands, ochreous-yellow; antennæ tipped with white. Expanse of wings $\frac{6}{10}$ in.

759. *SYNTOMIS VIGORSI, Moore.*

Syntomis Vigorsi, *Moore, P. Z. S.* (1859), *p.* , *pl.* *fig.* .

a. b. c. Java. From Dr. Horsfield's Collection.

Syntomis Vigorsi, n. sp.—Male, black, glossed with metallic green; *fore-wing* with five quite transparent spots; *hind-wing* with one rather large central transparent spot; *body* dark metallic green; *antennæ* filiform, tipped with yellow. Female duller-coloured, and the spots larger. Expanse of male 1 in., of female 1¼ in.

760. *SYNTOMIS IMAON, Cramer Sp.*

Sphinx Adscita Imaon, *Cramer, Pap. Exot.* III. *p.* 94, *pl.* 248, *f. E.*

Syntomis Imaon, *Hübner, Verz. bek. Schmett. p.* 122. *Boisduval, Monogr. Zyg. p.* 114. *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 127.

a. b. Java. From Dr. Horsfield's Collection.

761. *SYNTOMIS SUBCORDATA, Walker.*

Syntomis subcordata, *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 132 (1854).

a. Bengal. Mr. Grote's Drawing.

The larva of *Synt. subcordata* is figured on Plate XIV., fig. 7, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on *Vitis pallida*."—(Grote, MS. Note.)

762. *SYNTOMIS PFEIFFERÆ, Moore.*

Syntomis Pfeifferæ, *Moore, P. Z. S.* (1859), *p.* , *pl.* *fig.* .

a. b. c. ♂ ♀. Java. From Dr. Horsfield's Collection.

Syntomis Pfeifferæ, n. sp.—Male, dark-brown; *fore-wing* with five pale yellow spots,—one disposed at the base of posterior margin, two inwardly oblique across the middle, and two from near apex; *hind-wing*, with its middle and along abdominal margin, yellow; *body* brown, with the face, collar, spots on thorax, and abdominal bands, yellow. Female, ferruginous-brown, the spots larger, and ochreous-yellow. Antennæ filiform in both sexes. Expanse of male 1⅜ in., of female 1⅞ in.

Remark. This species is somewhat allied to *S. tenuis*, Walker, from Celebes

763. *SYNTOMIS WALLACEI, Moore.*

Syntomis Wallacei, *Moore, P. Z. S.* (1859), *p.* , *pl.* *fig.*

a. b. Java. From Dr. Horsfield's Collection.

Syntomis Wallacei, n. sp.—Purple-brown; *fore-wing* with five and *hind-wing* with two semi-transparent small rounded yellowish spots; *body* with the face, collar, and abdominal bands, bright yellow; tip of antennæ and first joint of tarsi, white. Expanse of wings 1¼ in.

764. *SYNTOMIS CREUSA, Linnæus Sp.*

Sphinx Creüsa, *Linnæus, Syst. Nat.* II. *p.* 806 (1767); *Mus. Lud. Ulr. p.* 365. *Clerck, Icones, pl.* 16, *f.* 5. *Cramer, Pap. Exot.* III. *pl.* 248, *f. F.*

Syntomis Creüsa, *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 123.

Sphinx-Zygæna Creüsa, *Gmelin, Syst. Nat.* I. V. *p.* 2394.

Cœnochromia Creüsa, *Hübner, Verz. bek. Schmett. p.* 121.

a. b. ♂. Ceylon. From the Asiatic Society of Bengal.

c. d. ♂ ♀. N. India. Presented by Col. Buckley.

765. *SYNTOMIS LATREILLEI, Boisduval.*

Syntomis Latreillei, *Boisduval, Monogr. Zyg. p.* 117, *pl.* 7, *f.* 5 (1829). *Chenu, Encycl. d'Hist. Nat. Pap. p.* 246, *f.* 426. *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 121.

a. b. c. d. ♂ ♀. Dukhun. Presented by Col. Sykes.

766. *SYNTOMIS PENANGA, Moore.*

Syntomis Penanga, *Moore, P. Z. S.* (1859), *p.* , *pl.* , *fig.*

a. Penang. Presented by Dr. Cantor.

Syntomis Penanga, n. sp.—*Fore-wing* with two longitudinal narrow yellowish streaks from the base to one-third its length, also with two upper and one lower silvery transparent spots; *hind-wing* with a central transparent space, suffused anteriorly with yellowish; *body*,

with the collar, lower part of thorax, and band along lower margin of abdominal segments, yellowish; *antennæ* bipectinated, margined with whitish to near the tip. Expanse of wings 1 in.

767. *SYNTOMIS CANTORI, Moore.*

Syntomis Cantori, *Moore, P. Z. S.* (1859), *p.* *pl.* , *fig.* .

a. Penang. Presented by Dr. Cantor.

Syntomis Cantori, n. sp.—Fore-wing, from the base to near one-third its length, a small disco-cellular spot, apex, and narrowly along exterior margin, black, which also extends slightly up the first median veinlet, the middle portion of the wing being transparent and where the veins and costal margin are yellow: *hind-wing* black, with a minute transparent spot in the centre; *ciliæ* black; *body* wholly black, glossed with green; *antennæ* broken off. Expanse of wings $1\frac{5}{12}$ in.

768. *SYNTOMIS WALKERI, Moore.*

Syntomis Walkeri, *Moore, P. Z. S.* (1859), *p.* , *pl.* , *fig.* .

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

Syntomis Walkeri, n. sp.—Male, dark brown; *fore-wing* with seven yellow spots, two being disposed along costal margin, and narrow, two along posterior margin, the outer one of which has a minute spot above it, and two obliquely near the apex; *hind-wing* with costal margin whitish, and two yellow spots from the base; *body* with the collar, shoulders, and abdominal bands yellow. Female paler throughout, and the spots larger; *antennæ* bipectinated in the male, filiform in the female. Expanse of male $\frac{10}{12}$ in, of female 1 in.

769. *SYNTOMIS PRAVATA, Moore.*

Syntomis Pravata, *Moore, P. Z. S.* (1859), *p.* , *pl.* , *fig.* .

a. b. Java. From Dr. Horsfield's Collection.

Syntomis Pravata, n. sp.— Fuliginous-black; *fore-wing* with two transverse pairs of small white spots; *hind-wing* with two small white spots; *ciliæ* at the apex of each wing, and tip of antennæ, white; *antennæ* bipectinated, filiform at the tip.

770. *SYNTOMIS RAFFLESI, Moore.*

Syntomis Rafflesi, *Moore, P. Z. S.* (1859), *p.* , *pl.* *fig.* .

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

Syntomis Rafflesi, n. sp.—Male, smoky-black; *fore-wing* with two very narrow ochreous-yellow streaks at the base, and three transparent spots on the apical half, two being disposed transversely to posterior angle, the other near the apex; *hind-wing* with a transparent spot on the abdominal margin, also a small yellow central spot; front of head, collar, base of thorax, and narrow abdominal bands, ochreous-yellow. Female paler, with the ochreous-yellow brighter, the transparent spots being tinged with the same. *Antennæ* bipectinated in both sexes. Expanse of male $\frac{7}{8}$ in., of female $1\frac{1}{8}$ in.

771. *SYNTOMIS CRAWFURDI, Moore.*

Syntomis Crawfurdi, *Moore, P. Z. S.* (1859), *p.* , *pl.* , *fig.* .

a. b. c. Java. From Dr. Horsfield's Collection.

Syntomis Crawfurdi, n. sp.—Black; *fore-wing* with a narrow costal streak near the base, two longitudinal spots in the middle of the wing, and five small spots disposed in a semicircle near the apex, transparent; *hind-wing* with anterior margin and two spots, transparent; base of both wings coppery-red: *body* black, with the collar, shoulders, and abdominal bands coppery-red; *antennæ* bipectinated, metallic-green. Expanse of wings nearly 1 in.

Genus PHALANNA, *Walker.*

EUCHROMIA (PHALANNA), *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 218 (1854).

EUCHROMIA, *pt. Hübner.*

772. *PHALANNA POLYMENA, Linnæus Sp.*

Sphinx Polymena, *Linnæus, Syst. Nat.* II. *p.* 806 (1767). *Ray, Ins. p.* 135. *Drury, Exot. Ins.* I. *pl.* 26, *f.* 1.

Zygæna Polymena, *Fabricius, Spec. Ins.* II. *p.* 162 *Mant. Ins.* II. *p.* 104; *Ent. Syst.* III. 1. *p.* 396.

Sphinx Adscita Polymena, *Cramer, Pap. Exot.* I. *pl.* 13 *f. D.*

Sphinx - Zygæna Polymena, *Gmelin, Syst. Nat.* I. V. 2394.

Euchromia Polymena, *Hübner, Verz. bek. Schmett. p.* 121.

Glaucopis Polymena, *Westwood's edit. Drury's Exot. Ins. 2nd ea.* I. *p.* 50, *pl.* 26, *f.* 1.

Euchromia (Phalanna) Polymena, *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 219.

a. Calcutta. From the Asiatic Society of Bengal.
b. Assam. From McClelland's Collection.
c. d. N. India. Presented by Colonel Buckley.
e. Darjeeling. From Messrs. Schlagintweit's Collection.

The larva, pupa, and cocoon of *Phal. Polymena* are figured on Plate XIV., figs. 8, 8*a*, 8*b*, copied from the original drawing in the collection of A. Grote, Esq.

"Feeds on *Convolvulus*."—(Grote, MS. Note.)

Transformations of this species were observed in Canara by S. N. Ward, Esq.; and are also figured among the drawings in the Entomological Society's Library, made by Mrs. Hamilton.

Capt. Mortimer Slater says, in his MS. Notes, p. 152, "I often met with this insect (*P. Polymena*) at Dacca in 1844, and always in the hottest sunshine. It was generally taken on tall thistles, which appear to have a great attraction for this as well as other insects."

773. *PHALANNA HORSFIELDI, Moore.*

Phalanna Horsfieldi, *Moore, P. Z. S.* (1859), *p.* , *pl.* , *fig.* .

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

Phalanna Horsfieldi, n. sp. — Dark brown; *fore-wing* with a lengthened spot below the cell, indented in middle of its posterior margin, a shorter spot within the cell, and a transverse oblique row of spots near the apex, deep yellow; a small spot at base, and another near middle of the wing, indigo-blue: *hind-wing* with large yellow spot in its middle, and a semi-transparent spot near the base, the upper half of the latter being yellow; *body* black; face, spot on each shoulder, and under-side white; *abdomen* with two deep-yellow

bands, one being situated at the base, and the other on the fourth segment; top of head, thorax, and margin of the other abdominal segments, indigo-blue; *antennæ* bipectinated. Expanse of wings $1\frac{7}{12}$ in.

The larva and cocoon of *Ph. Horsfieldi* are figured on Plate XIV., figs. 9, 9*a*, from Java. "Feeds on a species of *Dioscorea*, bearing the native name of *Buduk-assa*. From the Southern Hills. December. Scarce."—(Horsfield, MS.)

Genus PHAUDA, *Walker*.

EUCHROMIA (PHAUDA), *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 256 (1854).

XENARES, *Herr. Schäffer, Lep. Exot. Spec. Nov. pp.* 58, 81 (1858).

774. *PHAUDA FLAMMANS, Walker.*

Euchromia (Phauda) flammans, *Walker, List Lep. Het. Brit. Mus. pt.* I. *p.* 257 (1854).

a. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

775. *PHAUDA* (?) *MAHISA, Moore.*

Phauda Mahisa, *Moore, P. Z. S.* (1859), *p.* , *pl.* *fig.*

a. Java. From Dr. Horsfield's Collection.

Phauda (?) *Mahisa, n. sp.*—*Wings* pale smoky-black; a band along entire length of costal margin of *fore-wing*, and along costal and abdominal margins of *hind-wing*, and *body* pale red; *antennæ* slightly serrated. Expanse of wings $1\frac{1}{10}$ in.

Genus SORITIA, *Walker*.

SORITIA, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 135 (1854).

776. *SORITIA LEPTALINA, Kollar Sp.*

Chalcosia leptalina, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II. *p.* 462 (1844).

Soritia leptalina, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 435.

a. Silhet. Presented by the Trustees of the British Museum.

b. Bootan. From Pemberton's Collection.

Genus AGALOPE, *Walker*.

AGALOPE, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 431 (1854).

777. *AGALOPE BASALIS, Walker* (*Plate* VIII*a*, *fig.* 5).

Agalope basalis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 438 (1854).

a. *b*. *c*. N. India. Presented by Colonel Buckley.

Genus HERPA, *Walker*.

HERPA, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 442 (1854).

778. *HERPA VENOSA, Walker* (*Plate* VIII*a*, *fig.* 6).

Herpa venosa, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 442 (1854).

a. Silhet. Presented by the Trustees of the British Museum.

b. *c*. Darjeeling. From Messrs. Schlagintweit's Collection.

Genus CALLIDULA, *Hübner*.

CALLIDULA, *Hübner, Verz. bek. Schmett. n.* 638 (1816).

PETAVIA, *Horsfield, Desc. Catal. Lep. Mus. E.I.C. pl.* 2, *f.* 1 (1828).

779. *CALLIDULA PETAVIA, Cramer Sp.*

Papilio Petavius, *Cramer, Pap. Exot.* IV. *pl.* 365, *f. C. D.* (1782).

Callidula Petavia, *Hübner, Verz. bek. Schmett. n.* 638.

Polyommatus Patavius, *Godart, Enc. Meth. Hist. Nat.* IX. *p.* 676.

Petavia Sakuni, *Horsfield, Desc. Catal. Lep. Mus. E.I.C. pl.* 2, *figs.* 1, 1*a*. *Westwood, in Doubleday and Hewitson's Diurnal Lep. pl.* 77, *f.* 7.

a. *b*. *c*. *d*. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus NYCTEMERA, *Hübner.*

NYCTEMERA, *Hübner, Verz. bek. Schmett. p.* 178 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 391.

DEILEMERA, *Hübner*, id.

LEPTOSOMA, *Boisduval.*

780. *NYCTEMERA DISTINCTA, Walker.*

Nyctemera distincta, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 392 (1854).

a. b. c. d. e. ♂ ♀. Java. From Dr. Horsfield's Collection.

781. *NYCTEMERA TRITA, Walker* (*Plate* VIII*a. fig.* 9).

Nyctemera trita, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 394 (1854).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

782. *NYCTEMERA LATISTRIGA, Walker.*

Nyctemera latistriga, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 397 (1854).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. f. ♂ ♀. Canara. Presented by S. N. Ward, Esq.

783. *NYCTEMERA LACTICINIA, Cramer Sp.*

Phalæna-Geometra Lacticinia, *Cramer, Pap. Exot.* II. *p.* 47, *pl.* 128, *f. E.* (1779).

Nyctemera Lacticinia, *Hübner, Verz. bek. Schmett. p.* 178. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 395.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. f. g. ♂ ♀. Ceylon. From Jonville's Collection.

The larva and pupa of *Nyct. Lacticinia* are figured on Plate XIV., figs. 10, 10*a*, from Java. "Feeds on *Cacalia conchifolia*, which bears the native name of *Tampo-ucijung*. February."—(Horsfield, MS.)

784. *NYCTEMERA TRIPUNCTARIA, Linnæus Sp.*

Phalæna-Geometra tripunctaria, *Linnæus, Syst. Nat. pt.* II. *p.* 864 (1767); *Mus. Lud. Ulr. p.* 395. *Cramer, Pap. Exot.* I. *p.* 34, *pl.* 22, *f. E. Fabricius, Spec. Ins.* II. *p.* 249; *Mant. Ins.* II. *p.* 191 (*Edwards's Nat. Hist. of Birds*, I. *pl.* 35).

Nyctemera tripunctaria, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 397.

Nyctemera atralba, *Hübner, Verz. bek. Schmett. p.* 178.

a. ♂ ♀. Penang. Presented by Dr. Cantor.

785. *NYCTEMERA COLETA, Cramer Sp.*

Phalæna-Geometra Coleta, *Cramer, Pap. Exot.* IV. *p.* 153, *pl.* 368, *f. H.* (1782).

Nyctemera Coleta, *Hübner, Verz. bek. Schmett. p.* 178. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 399.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

786. *NYCTEMERA CENIS, Cramer Sp.*

Phalæna-Geometra Cenis, *Cramer, Pap. Exot.* II. *p.* 82, *pl.* 147, *f. E.* (1779).

Nyctemera interlecta, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 400 (1854).

a. Darjeeling. From Pearson's Collection.

b. Cherra Poonjee. Presented by Col. Buckley.

c. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

787. *NYCTEMERA VARIANS, Walker.*

Nyctemera varians, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 400 (1854).

a. b. c. d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus PTEROTHYSANUS, *Walker.*

PTEROTHYSANUS, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 401, (1854).

788. *PTEROTHYSANUS LATICILIA, Walker* (*Plate* VIII*a*, *fig.* ♂, ♂).

♂ Pterothysanus laticilia, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 401 (1854).

a. b. c. d. ♂ ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus EUSCHEMA, *Hübner.*

EUSCHEMA, *Hübner, Verz. bek. Schmett. p.* 175 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 405.

HAZIS, *pt. Boisduval.*

789. *EUSCHEMA MILITARIS, Linnæus Sp.*

Phalæna-Attacus militaris, *Linnæus, Syst. Nat.* I. II. *p.* 811 (1767); *Mus. Lud. Ulr. p.* 375. *Cramer, Pap. Exot.* I. *p.* 46, *pl.* 29, *f. B.* (*Rœsel, Ins.* IV. *pl.* 6, *f.* 3. *D'Aubent, Misc. pl.* 67, *f.* 1).

Euschema militaris, *Hübner, Verz. bek. Schmett. p.* 175. *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 405.

Bombyx militaris, *Fabricius, Syst. Ent. p.* 559; *Spec. Ins.* II. *p.* 171; *Mant. Ins.* II. *p.* 110. *Donovan, Epit. Ins. Ind. pl.*

Hazis militaris, *Boisduval, Voy. de l'Astrolabe, Lép. pt.* II. *p.* 203. *Feisthamel, Voy. de la Favorite, Suppl. p.* 20. *Guénée, Hist. Nat. des Ins. Lép.* X. *Geometræ, p.* 193.

a. b. c. ♂ ♀. Java. From Dr. Horsfield's Collection.

d. e. f. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

790. *EUSCHEMA DISCALIS, Walker.*

Euschema discalis, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 407 (1851).

a. ♀. N. India. Presented by the Trustees of the British Museum.

791. *EUSCHEMA HORSFIELDI, Moore* (*Plate* VIIIa, *fig.* 7).

Euschema Horsfieldi, n. sp.—Female, *fore-wing* blue-black, with a longitudinal streak from the base, and three transverse interrupted and irregular bluish-white bands; two deep-yellow marks extending upward from the posterior margin,—the first from its middle, the second from near the angle: *hind-wing* deep yellow, with two rounded discal spots, a submarginal row of lunated and a marginal row of rounded spots, blue-black; *antennæ* and fore-legs blackish; *body* yellow; top of the head, two bands across the thorax, and bands of abdomen, blue-black. Expanse 3½ in.

a. ♀. Java. From Dr. Horsfield's Collection.

792. *EUSCHEMA TRANSVERSA, Walker.*

Euschema transversa, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 407 (1854).

a. b. c. ♂ ♀. Ceylon. From Jonville's Collection.
d. e. ♂ ♀. Dukhun. Presented by Col. Sykes.

Stirps II.—Larvæ FASCICULATÆ.

The larva of this stirps is characteristically *fasciculate*, being covered with fascicles or tufts of silken hairs; several of these tufts are short, dense, disposed along the back, and limited to certain segments, while others are more lengthened, projecting anteriorly or posteriorly, or both anteriorly and posteriorly. In some genera these fascicles are replaced by short hairs arising from separate tubercles. Metamorphosis:—Cocoon soft, irregular on the surface, of a slight silken and hairy texture.

The perfect insect has the wings broad in the male, longer, or only *rudimentary*, in the female; flies by day and evening. Antennæ deeply bipectinated in the male, less so in the female. Proboscis very short, or obsolete. Abdomen of male slender, of female larger, broad, and generally with an anal tuft. Fore-legs very hairy.

PHALÆNA *sect.* BOMBYCES, *pt. Linnæus, S. N.* I. II. (1767).

BOMBYCES (*Larvæ* D. G. H. FASCICULATÆ, NODOSÆ, *et* CRISTATÆ), *Denis et Schiffermüller, Wien. Verz. pp.* 51, 54, 55 (1776).

BOMBYCIDÆ (*Stirps* I. FASCICULATÆ, *pt.*), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 24, 27 (1828).

BOMBYX, *pt. Haworth, Lep. Brit. pp.* 76, 77, 124 (1803).

BOMBYCITES, *sect.* LEGITIMÆ, *pt. Latreille, Gén. Crust. et Ins.* IV. *p.* 217 (1809).

ARCTIIDÆ, *pt. Leach, Edinb. Encycl. p.* (1815). *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 54 (1828); id. *Catal. Brit. Lep. Brit. Mus. p.* 49 (1850). *Westwood, Introd.* II. *p* 384 (1840).

HYPOGYMNÆ, LEUCOMÆ, *et* DASYCHIRÆ, *Hübner, Zutrüge, p.* 4 (1818).

BOMBYCIDA, *pt. Duncan, in Brewster's Edinb. Encycl.* IX. *p.* 132 (1830).

NOTODONTÆ *et* LARIÆ, *pt. Newman, Sph. Vesp. pp.* 42, 44 (1832).

ARCTIITES *et* NOTODONTITES, *pt. Newman, Entom. Mag.* II. *p.* 383 (1834); id. *Hist. of Ins. 2nd edit. pp.* 212, 213 (1841).

LIPARIDES *et* NOTODONTIDES, *pt. Boisduval, Ind. Méth. pp.* 66, 84 (1840).

LIPARITES *et* PYGÆRITES, *pt. Blanchard, Hist. Nat. des Ins.* II. *pp.* 362, 365 (1845).

NOTODONTIDÆ, *pt. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 10 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 37 (1850). *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 977 (1855). *Stainton, Manual Brit. Lep. pp.* 107, 114 (1856).

PYGERIDI *et* LIPARIDI, *Stephens, Catal. Brit. Lep. Brit. Mus. pp.* 37, 49 (1850).

LIPARIDÆ, *Stainton, Manual Brit. Lep. pp.* 107, 128 (1856).

LIPARIDÆ, *pt. Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 780 (1855).

LIPARIDINA, *pt. Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 69 (1858).

Genus REDOA, *Walker.*

REDOA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 826 (1855).

793. *REDOA SUBMARGINATA, Walker.*

Redoa submarginata, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 826 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Redoa submarginata* are figured on Plate XIV., figs. 11, 11*a*, from Java. "Feeds on the Mango (*Mangifera indica*). May and June."—(Horsfield, MS.)

794. *REDOA RINARIA, Moore.*

Redoa Rinaria, n. sp.—Male and female, silvery-white; *fore-wing* with a narrow undulating brownish line from apex to middle of posterior margin; antennæ and body white; palpi black above; tarsus and tibia of fore and middle pair of legs with black spots. Expanse of male 1½ in., of female 2 in.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus PANTANA, *Walker.*

PANTANA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 819 (1855).

795. *PANTANA BASWANA, Moore* (*Plate* IX*a*, *fig.* 1).

Pantana Baswana, n. sp.—Male, white; *fore-wing* with the apical third brownish, the basal portion having a brownish tinge, some black dots along the disc below the cell; *hind-wing* with the margin brownish:

antennæ pale brown; palpi ferruginous; body beneath and legs testaceous white. Expanse 1½ in.

a. b. c. ♂. Java. From Dr. Horsfield's Collection.

Genus AROA, *Walker*.

AROA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 791 (1855).
GYNÆPHORA, *pt. Hübner.*

796. *AROA SOCRUS, Hübner Sp.*

Gynæphora Socrus, *Hübner, Geyer, Zuträge, pt.* IV. *p.* 12, *figs.* 837, 838 (1837).
Aroa substrigosa, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 794 (1855).

a. b. c. ♂. Java. From Dr. Horsfield's Collection.

Genus PROCODECA, *Walker.*

PROCODECA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 812 (1855).
RICINE, *Walker*, id. *p.* 824 (1855).

797. *PROCODECA ANGULIFERA, Walker.*

♂ Procodeca angulifera, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 919 (1855).
♀ Ricine suffusa, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 824 (1855).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

798. *PROCODECA ADARA, Moore.*

Procodeca Adara, n. sp.—Female, pale dull brownish-testaceous, of a somewhat transparent hue; *fore-wing* with three brown dots below the extremity of the cell; the ciliæ of both wings waved, giving it the appearance of being spotted. Expanse 1½ in.

a. ♀. Java. From Dr. Horsfield's Collection.

Genus PSALIS, *Hübner.*

PSALIS, *Hubner, Zuträge, pt.* II. *p.* 19. *f.* 291–2 (1823).
ARESTHA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 805 (1855).

799. *PSALIS SECURIS, Hübner.*

♀ Psalis securis, *Hübner, Zuträge, pt.* II. *p.* 19, *f.* 291–2 (1823); *Samml. Exot. Schmett.* III. *pp.* 9, 146, *f.* 291–2.

Drepana securis, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1762.

♂ Arestha antica, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 805 (1855).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Psalis securis* are figured on Plate XIV., figs. 12, 12*a*, from Java. "Feeds on the *Oryza sativa*, bearing the native names of *Pari* or *Pady*. January to March. Common."—(Horsfield, MS.)

The transformations of this species are also figured among the original drawings made in India by Lady Isabella Gilbert.

Genus DASYCHIRA, *Stephens.*

Dasychira, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 58 (1828).

Phalæna-Bombyx, *pt. Linnæus.*

Bombyx, *pt. Fabricius.*

Laria, *pt. Schrank.*

800. *DASYCHIRA HORSFIELDI, Saunders Sp.*

Arctia Horsfieldii, *Saunders, Trans. Ent. Soc. n. s.* I. *p.* 162, *pl.* 12, *f.* 1, 2 (1851); *Zoologist*, IX. *p.* 3070. *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 613.

a. ♂. Java. From Dr. Horsfield's Collection.

The larva, pupa, and cocoon of *Dasy. Horsfieldi* are figured on Plate XIV., figs. 13, 13*a*, from Java. "Feeds on the *Kapas* (*Gossypium herbaceum*). August."—(Horsfield, MS.)

801. *DASYCHIRA GROTEI, Moore.*

Dasychira Grotei, n. sp.—Female, white; *fore-wing* irrorated with minute brown scales; *hind-wing* white; antennæ brown; head, thorax, abdomen, and legs white. Expanse $2\frac{5}{8}$ in.

a. ♀. N. India. Donor unknown.

b. ♀ (?). Penang. Presented by Dr. Cantor.

The larva and cocoon of *Dasy. Grotei* are figured on Plate XV., figs. 1, 1*a*, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on *Terminalia catalpa*."—(Grote, MS. Note.)

802. *DASYCHIRA ARGA, Moore.*

Dasychira Arga, n. sp.—Female, white; *fore-wing* irrorated with minute brown scales, and having some transverse undulated indistinct brown lines; *hind-wing* white; antennæ, head, thorax, and fore-legs irrorated with brown scales; abdomen white. Expanse $3\frac{3}{8}$ in.

a. ♀. Java. From Dr. Horsfield's Collection.

803. *DASYCHIRA MARUTA, Moore.*

Dasychira Maruta, n. sp.—Female, grey; *fore-wing* densely irrorated with dark-brown scales, with three transverse irregular dark-brown lines,—the first sub-basal, the second nearly adjoining, and bifid anteriorly, the third beyond the disc, blackish, recurved, and undulated,—a fourth submarginal zigzag line, a marginal row of spots, and an indistinct pale discal spot: *hind-wing* paler, with two very indistinct suffused brownish discal bands, and a submarginal brown line; head, thorax, and abdomen dark grey. Expanse $2\frac{5}{8}$ in.

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

804. *DASYCHIRA INCLUSA, Walker.*

Dasychira inclusa, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1737 (1856).

a. b. c. d. e. f. g. h. i. j. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of the female of *Dasy. inclusa* are figured on Plate XV., figs. 2, 2*a*, from Java. "Feeds on a species of *Calyptra*... *thes*, bearing the native name of *Yuet*. April. Feeds also on the *Waringin* (*Ficus sp.*——); the *Dadap* (*Erythrina sp.*——); and the *Girang* (*Leea sp.*——)."—(Horsfield, MS.)

805. *DASYCHIRA CHALANA, Moore.*

Dasychira Chalana, n. sp.—Female, dark brown, palest on the exterior margin; *fore-wing* with a broad zigzag-margined band across the middle, and along the posterior margin and about the apex.

greenish-white, a submarginal zigzag brown line; *hind-wing* pale brown; antennæ, palpi, head, and front of thorax, dark brown; hind-part of thorax and abdomen pale brown; legs brown, with hoary spots. Expanse 1⅝ in.

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

806. *DASYCHIRA MISANA, Moore* (*Plate* IX*a*, *fig.* 2, ♂).

Dasychira Misana, n. sp.—Male, brown; *fore-wing*, from the base broadly along the costa to middle of the disc, and upward to near the anterior angle, white, on which are some indistinct brown wavy marks; a dark-brown zigzag line extending from near posterior angle up the disc; a submarginal row of dark-brown dots bordered inwardly with white: *hind-wing* pale brown, with paler margin; antennæ, body, and legs, brown. Expanse 1⅜ in.

a. b. ♂. Java. From Dr. Horsfield's Collection.

807. *DASYCHIRA ASVATA, Moore.*

Dasychira Asvata, n. sp.—Dark brown. Male, *fore-wing* with a black spot at the base, a white narrow bifid line along the discoidal veins from the base to the apex, a transverse zigzag dark line one-third from the apex, and a submarginal row of dark dots; *hind-wing* pale brown; antennæ, head, body, and legs, dark brown. Female with the discoidal and apical veins whitish, and some brown patches about the disc and along exterior margin. Expanse of male 1⅜ in., of female 2⅜ in.

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

808. *DASYCHIRA SAWANTA, Moore.*

Dasychira Sawanta, n. sp.—*Fore-wing* brown, with a rounded dark-margined whitish spot near the base, and a pale-brown spot on lower part of the disc; a transverse slightly-curved dark line from the costa one-third from the base, and a lengthened dark spot one-third from the apex, also an indistinct dark submarginal zigzag line; *hind-wing* brownish-white; antennæ, head, and thorax, brown; abdomen brownish-white, with a darker dorsal line. Expanse 1⅜ in.

a. ♂. Java. From Dr. Horsfield's Collection.

809. *DASYCHIRA APSARA, Moore.*

Dasychira Apsara, n. sp.—Female, silky-white; *fore-wing* with the veins yellowish basally, and brownish apically; palpi and hairs beneath the head, blackish; thorax above and beneath, and legs, white; abdomen blackish, with white segmental bands, narrow above, broad beneath; anal tuft, yellowish. Expanse 1¾ in.

a. ♀. N. India. Presented by Col. Buckley.

810. *DASYCHIRA ILITA, Moore.*

? Redoa argentea, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 827 (1855).

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Dasychira Ilita, n. sp.—Silky-white. Female, *fore-wing* with all the veins, except the costal, blackish; head, thorax, abdomen, and anal tuft, white. Expanse 2 in.

Genus OLENE, *Hübner.*

Olene, *Hübner, Zuträge, f.* 293, 294 (1823).
Rilia, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1075 (1855).

811. *OLENE MENDOSA, Hübner.*

Olene mendosa, *Hübner, Zuträge, f.* 293, 294 (1823).
Rilia lanceolata, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1075 (1855).

a. b. ♀. Java. From Dr. Horsfield's Collection.
c. ♀. Canara. Presented by S. N. Ward, Esq.

The larva and cocoon of *Olene mendosa* are figured on Plate XV., figs. 3, 3*a*, from Java. "Feeds on a species of *Cassia*, which bears the native names of *Keteppeng* and *Dadap*. April."—(Horsfield, MS.)

Genus ILEMA, *Moore.*

Millia,* *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 808 (1855).

* This name has been previously used among Lepidoptera.

812. *ILEMA COSTALIS, Walker Sp.*

Melia costalis, *Walker, List Lep. Het. Brit. Mus. pt.* IV *p.* 808 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Ilema costalis* are figured on Plate XV., figs. 4, 4*a*, from Java. "Feeds on the *Dadap* (*Erythrina sp.*——); the *Galing* (*Cissus sp.*——); and the *Gerang* (*Leea sp.*——). December to January. Not common."—(Horsfield, MS.)

Genus LYMANTRIA, *Hübner.*

LYMANTRIA, *Hübner, Verz. bek. Schmett. p.* 160 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 870.

HYPOGYMNA *et* PSILURA, *Stephens, Ill. Brit. Ent. Haust.* II. *pp.* 55, 79 (1828).

PHALÆNA-BOMBYX, *pt. Linnæus.*

BOMBYX, *pt. Fabricius.*

LARIA, *pt. Schrank.*

LIPARIS, *pt. Ochsenheimer.*

PORTHETRIA, *pt. Hübner.*

PORTHETRIA, *Westwood.*

813. *LYMANTRIA LINEATA, Walker.*

Lymantria lineata, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 875 (1855).

a. ♀. Java. From Dr. Horsfield's Collection.

814. *LYMANTRIA NARINDRA, Moore.*

Lymantria Narindra, n. sp.—Female, *fore-wing* white, with two spots at the base, a discal band extending broadly from the posterior margin, and tapering to the costa one-third from the apex, and which has two branches upward and inward to the costa,—the first to near its base, the second to its middle; a small dot within the cell, a lunated costal spot near the apex, spots along exterior margin, and a larger central submarginal spot, and three spots upward from posterior margin near the angle, brown: *hind-wing* pale brown, somewhat white about the base, and with marginal white spots; antennæ, palpi, front, and three spots on the thorax, abdomen beneath, and legs,

blackish-brown; thorax, and two spots on anterior tibia, white; abdomen above, brown anteriorly, reddish posteriorly, the segments fringed with white above, and with red laterally and beneath. Expanse 3¼ in.

a. ♀. Java. From Dr. Horsfield's Collection.

815. *LYMANTRIA MUNDA, Walker.*

Lymantria munda, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 875 (1855).

a. ♀. Java. From Dr. Horsfield's Collection.
b. c. ♂. Cherra Poonjee. Presented by Col. Buckley.
d. ♂. Darjeeling. From Messrs. Schlagintweit's Collection.

816. *LYMANTRIA SUPERANS, Walker.*

Lymantria superans, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 876 (1855).

a. ♂. N. India. Presented by Col. Buckley.

817. *LYMANTRIA BEATRIX, Stoll Sp.*

♀ Phalæna-Bombyx Beatrix, *Stoll, Suppl. Cramer's Pap. Exot. p.* 173, *pl.* 40, *f.* 2 (1791).

Lymantria Beatrix, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 877.

Porthetria Beatrix, *Hübner, Verz. bek. Schmett. p.* 160.

♀ Lymantria marginata, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 877 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Lym. Beatrix* are figured on Plate XV., figs. 5, 5*a*, from Java. "Feeds on the *Jambu-bessi* (*Psidium pyriferum*) March."—(Horsfield, MS.)

818. *LYMANTRIA OBSOLETA, Walker.*

♂ Lymantria obsoleta, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 880 (1855).

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

819. *LYMANTRIA ASÆTRIA, Hübner.*

Lymantria Asætria, *Hübner, Samml. Exot. Schmett.* II. *f.* 1–4 (1806–27). *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 878 (1855).

a. b. c. d. e. ♂. Java. From Dr. Horsfield's Collection.

820. *LYMANTRIA PRAMESTA, Moore* (*Pl.* IX*a*, *fig.* 3, ♀).

Dasychira antica, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1739 (1856).

a. b. c. d. and pupa, ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Lym. Pramesta* are figured on Plate XV., figs. 6, 6*a*, from Java. "Feeds on the *Assem* (*Tamarindus indicus*). December. Very abundant on the leaves of the *Tamarind*."—(Horsfield, MS.)

Remark.—*Lym. Pramesta* may ultimately prove to be the female of *Lym. Asætria*, Hübner.

821. *LYMANTRIA GANARA, Moore.*

Lymantria Ganara, n. sp.— Male, cream-white or fawn-colour: *fore-wing* with four indistinct zigzag transverse brown lines,—the first one-third from the base, the fourth parallel with the exterior margin, the second and third medial; two black dots at the base, and dots along the costa and the exterior margin: *hind-wing* with an indistinct submarginal brown band; body fawn-colour, with row of indistinct dorsal dots; palpi black towards the base; legs fawn-colour, spotted with black above. Some specimens with all the markings very indistinct. Expanse 1⅝ in.

a. b. c. d. ♂. Java. From Dr. Horsfield's Collection.

Remark.—This species differs from *Lym. Asætria* in having the hind-wings more quadrate, by its pale body, and by the thorax being without black dots.

822. *LYMANTRIA ARYAMA, Moore.*

Lymantria Aryama, n. sp.—Male, *fore-wing* pale sienna-brown, with a transverse streak one-third from the base, and a recurved double zigzag line one-third from the apex, the space along the exterior margin of the wing and broadly across the disc, a discal dot, two series of basal dots and a series of cilial dots, blackish; *hind-wing* pale brown, with the base and two narrow marginal bands somewhat darker brown, cilial dots blackish; antennæ, head, and thorax dark brown; base of abdomen and anal tuft pale brown; end of abdomen red, with black bands; thorax with three black dots anteriorly; legs brown, femur with a black spot; extremity of tarsi red. Expanse 2 in.

a. b. c. ♂. Canara. Presented by S. N. Ward, Esq.

Remark.—This species is allied to *Lym. dispar*, Linn.

823. *LYMANTRIA BHASCARA, Moore.*

Lymantria lunata, var. *β*, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 879.

Lymantria Bhascara, n. sp.—Female, *fore-wing* pale fawn-colour, thickly irrorated with brown, with several transverse zigzag lines; *hind-wing* rosy, with broad brown marginal band; palpi and antennæ blackish; thorax brown; abdomen above rosy, with blackish bands, brown beneath; legs brown, with blackish tarsi. Expanse nearly $2\frac{1}{2}$ in.

a. b. c. ♀. N. India. Presented by General Hearsey.

d. ♀. Darjeeling. From Messrs. Schlagintweit's Collection.

Remark.—This species may probably be the female of *Lym. Aryama.*

824. *LYMANTRIA DISPAR, Linnæus Sp.*

Phalæna-Bombyx dispar, *Linnæus, Syst. Nat.* II. *p.* 821.

Lymantria dispar, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 872.

Bombyx dispar, *Fabricius, Ent. Syst.* III. I. *p.* 437.

Porthetria dispar, *Hübner, Verz. bek. Schmett. p.* 160.

Liparis dispar, *Ochsenheimer, Schmett. von Eur.* III. *p.* 195.

Hypogymna dispar, *Stephens, Ill. Brit. Ent. Haust.* II. *p.* 56.

a. ♂. N. India. Presented by General Hearsey.
b. ♂. Dukhun. Presented by Col. Sykes.
c. *d*. India.

Remark.—These specimens of *L. dispar* are identical with those taken in England.

Genus ENOME, *Walker*.

ENOME, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 883 (1855).

825. *ENOME AMPLA, Walker Sp.* (*Plate* IX*a*, *fig.* 4, ♂).

Enome ampla, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 833 (1855).

a. *b*. *c*. ♂. N. India. Presented by Col. Buckley.

The larvæ and pupæ of both sexes of *Enome ampla* are figured on Plate XV., figs. 7, 7*a*; 8, 8*a*, copied from the original drawing of R. W. G. Frith, Esq., in the collection of A. Grote, Esq. of Calcutta. The female is represented in Mr. Frith's drawing as being apterous, like that of *Orgyia*. The transformations of both sexes are figured in the above drawing. The larva "feeds on *Ricinus*." — (Grote, MS. Note.)

The transformations were also observed and figured by Lady Isabella Rose Gilbert, the larva being "found on August 1st feeding on *Sakooa*. During the day it remained in a hollow bamboo, coming out at night only for food. On the 16th it wove a transparent web, the moth coming out on the 24th. The female is apterous."

Also figured among E. L. Layard's drawings, from Ceylon. "Female wingless."

Genus SOMERA, *Walker*.

SOMERA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 882 (1855).

826. *SOMERA BARUNA, Moore*.

Somera Baruna, n. sp.—Female, *fore-wing* dull green, brownish along the costa, with several undulating transverse indistinct lines, and patch near base of costa, brown; *hind-wing* pale brown; antennæ, head, thorax, and fore-legs, dull green; hind-legs and abdomen pale brown. Expanse 2 in.

a. *b*. ♀. Java. From Dr. Horsfield's Collection.

Genus LACIDA, *Walker*.

LACIDA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 801 (1855).

827. *LACIDA POSTICA, Walker.*

Lacida postica, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 803 (1855).

a. b. c. d. e. f. ♂. Java. From Dr. Horsfield's Collection.

Genus EUPROCTIS, *Hübner*.

EUPROCTIS *Hübner, Verz. bek. Schmett.* (1816).
PORTHESIA, *Stephens, Ill. Brit. Ins. Haust.* I. *p.* 65 (1828).

828. *EUPROCTIS ATOMARIA, Walker.*

Euproctis atomaria, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 837 (1855).

a. b. c. d. e. f. g. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Eup. atomaria* are figured on Plate XVI., figs. 1, 1*a*, from Java. "Feeds on *Dioscorea oppositifolia*, *Annona squamosa*, and *Tamarindus indicus*. November. Common." — (Horsfield, MS.)

Cocoon enveloped in a leaf.

829. *EUPROCTIS DERSA, Moore.*

Euproctis Dersa, n. sp.—Male and female, *fore-wing* yellow, whitish along the veins; the base of the costa ferruginous; an ochreous-yellow discal spot, which is indistinct in the female: *hind-wing* testaceous-white; antennæ, head, sides of thorax, abdomen, and legs, yellow; palpi, inside of fore-legs, front and middle of thorax (in the male only), ferruginous; abdominal tuft, ferruginous-yellow. Expanse of male 1¼ in., of female 2 in.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

830. *EUPROCTIS IRRORATA, Moore.*

Euproctis irrorata, n. sp.—White, *fore-wing* with numerous black dots; antennæ, palpi, head, and thorax, pale yellow; base of abdomen white, extremity brown, the tuft deep yellow; legs white. Expanse 1¼ in.

a. ♀. Java. From Dr. Horsfield's Collection.

831. *EUPROCTIS GAMMA, Walker.*

Euproctis gamma, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1731 (1856).

a. b. c. ♂. N. India. Presented by Col. Buckley.

d. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

832. *EUPROCTIS VARIA, Walker* (*Plate* IX*a. fig.* 5, ♂).

Euproctis varia, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 840 (1855).

a. ♂. N. India. Presented by Col. Buckley.

Euproctis varia.—Male, yellow; *fore-wing* with a broad ferruginous-brown streak tapering from middle of posterior margin, upward and outward, to near the apex; a brown dot at the base, and a black spot within the discoidal cell: *hind-wing* pale yellow; antennæ, palpi, head, legs, and abdominal tuft, yellow; thorax reddish-yellow; abdomen above brownish. Expanse 1⅝ in.

833. *EUPROCTIS MADANA, Moore.*

Euproctis Madana, n. sp.—Yellow, *fore-wing* with the base suffused with brown; a brown band from middle of posterior margin extending outward and upward to the costa before the apex, and having a branch to exterior margin below the apex; a black dot within the cell: *hind-wing* pale yellow; antennæ, head, body, and legs, yellow. Expanse 2¼ in.

a. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

834. *EUPROCTIS LUNATA, Walker.*

Euproctis lunata, *Walker, List Lep. Het. Brit. Mus. pt.* IV *p.* 837 (1855); id. *pt.* VII. *p.* 1731.

a. b. c. d. e. ♂ ♀. Dukhun. Presented by Col. Sykes.

The larva of *Euproctis lunata* is figured on Plate XVI., fig. 2, copied from the original drawings in the collection of A. Grote, Esq. "Feeds on *Combretum Wightianum*." (Grote, MS.)

The transformations also figured among Capt. Mortimer Slater's drawings. "Feeds on *Tamarix indica*. Dinapore. September 29 1849."—(Slater's Notes.)

835. *EUPROCTIS BIGUTTA, Walker.*

Euproctis bigutta, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 837 (1855).

a. ♂. Java. From Dr. Horsfield's Collection.

b. ♀. Canara. Presented by S. N. Ward, Esq.

836. *EUPROCTIS VIRGUNCULA, Walker.*

Euproctis virguncula, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 836 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. f. ♂ ♀. N. India. Presented by General Hearsey.

g. h. ♂ ♀. Dukhun. Presented by Col. Sykes.

i. Chusan. Presented by Dr. Cantor.

The larva and cocoon of *Eup. virguncula* are figured on Plate XVI., figs. 3, 3*a*, from Java. "Feeds on the *Balontas* (*Conyza balsamifera*); the *Dadap* (*Erythrina sp.*——); and the *Uwi* (*Dioscorea oppositifolia*). November to March. Very abundant."—(Horsfield, MS.)

837. *EUPROCTIS LODRA, Moore* (*Plate* IX*a*, *fig.* 6).

Euproctis Lodra, n. sp.— Female, *fore-wing* brown, palest at the base, yellowish along the costa; *hind-wing* brown, with a broad yellowish marginal band; antennæ, head, legs, and abdominal tuft, yellow; thorax and abdomen brown. Expanse 1⅝ in.

a. ♀. Java. From Dr. Horsfield's Collection.

Genus PERINA,* *Walker.*

Perina, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 966 (1855).

838. *PERINA BASALIS, Walker.*

♂ Perina basalis, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 966 (1855).

♀ Euproctis antica, var. *c*, *Walker*, id. *p.* 835.

♀ Euproctis subatomaria, *Walker, MS. Brit. Mus.*

* Founded on the male insect from Java by Mr. Walker in his family Perinæ.

a. b. c. d. e. ♂ ♀. N. India. Presented by Colonel Buckley.

The larva of *Perina basalis* is figured on Plate XVI., fig. 4, copied from the late R. W. G. Frith's drawing, now in the possession of A. Grote, Esq.

Remark. — Both sexes of this curious genus were reared by Mr. Frith, and verified by Mr Grote. "Larva feeds on *Ficus religiosa*. A specimen of the female emerged from the pupa this morning, October 8th, and two males immediately flew in to her."—(Grote's MS.)

Mr. Walker, in the Catal. of Lep. Het. in Brit. Mus. p. 835, has placed some specimens of the female of this insect as a variety of the female of his *Euproctis antica*, but which I have found, from the examination of the neuration of the wings, to be quite distinct.—F. M.

Genus ARTAXA, *Walker*.

ARTAXA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 794 (1855).

839. *ARTAXA DIGRAMMA, Boisduval Sp.*

Bombyx digramma, *Boisduval, Iconogr. du Règne Anim. Ins. p.* 508, *pl.* 86, *f.* 4 (1829–38).

Artaxa guttata, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 795 (1855).

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

c. ♀. Penang. Presented by Dr. Cantor.

d. e. ♂. N. India. Presented by General Hearsey.

f. ♂. Canara. Presented by S. N. Ward, Esq.

The larva and cocoon of *Artaxa digramma* are figured on Plate XVI., figs. 5, 5*a*, copied from R. W. G. Frith's original drawing.

"Feeds on the castor-oil plant (*Ricinus*)." — (John Reeves, MS. Note.)

840. *ARTAXA ZEBOE, Moore* (*Plate* IX*a*, *fig.* 7 ♂).

Artaxa Zeboe, n. sp.—Male, *fore-wing* yellow, whitish along the veins, with a brown discal dot and an oblique short series of dots below it; *hind-wing* yellowish-white; antennæ pale brown; palpi black above; lower part of abdomen above pale brown; tuft yellow. Expanse $1\frac{3}{8}$ in.

a. ♂. Java. From Dr. Horsfield's Collection.

841. *ARTAXA SASTRA, Moore.*

Artaxa Sastra, n. sp.—Female, yellow; *fore-wing* with one apical black dot; abdomen brownish, tuft yellow. Expanse 1¼ in.

a. ♀. Java. From Dr. Horsfield's Collection.

842. *ARTAXA KALA, Moore.*

Artaxa Kala, n. sp.—Female, white; *fore-wing* with two apical black spots, the upper one the smallest. Expanse 1¼ in.

a. ♀. Java. From Dr. Horsfield's Collection.

843. *ARTAXA VARIANS, Walker.*

Artaxa varians, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 796 (1855).

a. China. Presented by Dr. Cantor.

844. *ARTAXA LINTA, Moore.*

Artaxa Linta, n. sp.—Yellow, *fore* and *hind-wings* clouded with brownish-testaceous in the middle. Expanse 1 in.

a. Java. From Dr. Horsfield's Collection.

845. *ARTAXA OBSCURA, Moore.*

Artaxa obscura, n. sp.—Brown; *fore-wing* pale testaceous at the base and apex; antennæ, head, and thorax, pale testaceous; abdomen brown. Expanse ⅝ in.

a. Java. From Dr. Horsfield's Collection.

846. *ARTAXA SUBRANA, Moore.*

Artaxa Subrana, n. sp.—Pale brown; *fore-wing* palest about the costa, with two transverse white zigzag lines,—one a little before the middle, the other submarginal, both curving inwards; two white spots near the apex, and two at the posterior angle: *hind-wing* brown, with broad pale yellow border; antennæ, head, and legs, yellowish; thorax and abdomen brown, tuft yellow. Expanse 1⅜ in.

a. ♀. Java. From Dr. Horsfield's Collection.

847. *ARTAXA SIMILIS, Moore.*

Artaxa similis, n. sp.—Ferruginous-brown; *fore-wing* with three marginal yellow spots, one at each angle, the other medial, that at the apex being very small; *hind-wing* with a yellow margin, &c.

tennæ, head, body, and legs, ferruginous-brown; abdominal tuft pale ferruginous. Expanse $1\frac{3}{8}$ in.

a. ♂ ♀. Java. From Dr. Horsfield's Collection.

818. *ARTAXA ATOMARIA, Walker.*

Artaxa atomaria, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 796 (1855).

a. ♀. Chusan. Presented by Dr. Cantor.

819. *ARTAXA JUSTICIÆ, Moore.*

Artaxa Justiciæ, n. sp.—*Fore-wing* brown, minutely irrorated with black scales, pale yellowish along the costal margin, three yellow spots on exterior margin; *hind-wing* testaceous-yellow; body testaceous-brown. Expanse 1 in.

Allied to *A. similis* and *A. atomaria.*

a. ♀. Bengal. Mr. Grote's Drawing.

The larva and cocoon of *A. Justiciæ* are figured on Plate XVI., figs. 6, 6*a*, copied from Mr. Grote's original drawing. Cocoon attached to a leaf. "The larva feeds on *Æschynomene Sesban, Duranta, Zizyphus,* and *Justicia.*"—(Grote, MS. Note.)

850. *ARTAXA TRANSVERSA, Moore* (*Plate* IX*a*, *fig.* 8).

Artaxa transversa, n. sp.—Dull testaceous; *fore-wing* irrorated with minute black scales, with two transverse black maculated lines; *hind-wing* brown, the ciliæ dull testaceous; antennæ, head, and thorax, dull testaceous; abdomen pale brown, anal tuft dull testaceous. Expanse $1\frac{3}{8}$ in. to $1\frac{5}{8}$ in.

a. *b*. *c*. Java. From Dr. Horsfield's Collection.

Genus ICHTHYURA, *Hübner.*

Ichthyura, *Hübner. Verz. bek. Schmett. p.* 162 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1054.

Clostera, *Hoffmansegg, MS. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 12 (1828).

Laria, *pt. Schrank.*

Pygera, *pt. Ochsenheimer.*

851. *ICHTHYURA JAVANA, Moore.*

Ichthyura Javana, n. sp.—Brown. Male, *fore-wing* with three narrow transverse whitish lines,—the first near the base, the second from the

costal end of the first obliquely to the posterior margin near the end of the third, the latter being zigzag, and one-third from the apex, and having on its exterior margin anteriorly some whitish dots, a basal dot and dot outside the third transverse line, a spot at the end of the cell, and the outer margin of the oblique line posteriorly, blackish; tip deep brown: *hind-wings* brownish-white. Female with an additional short whitish line posteriorly between the second and third lines; the exterior margin of the third line anteriorly is ferruginous. Expanse of male $\frac{7}{8}$ in., of the female $1\frac{1}{8}$ in.

a. b. c. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Ich. Javana* are figured on Plate XVI., figs. 7, 7*a*, from Java. "Feeds on a species of *Salix*. May."—(Horsfield, MS.)

Genus SELEPA, *Moore*.

Antennæ filiform.
Palpi projecting beyond the head, slender, scaly beneath, pilose above.
Proboscis short.
Thorax broad. *Abdomen* stout.
Legs covered with minute scales.
Fore-wings elongate; *hind-wings* somewhat trigonate.

852. *SELEPA CELTIS, Moore* (*Plate* IX*a*, *fig.* 9).

Selepa Celtis, n. sp.—*Fore-wing* greyish-brown, with a large discal double circular dark-brown line, with a suffused dark-brown centre, an ill-defined submarginal brown line, and two suffused brown lines at the posterior angle; ciliæ grey: *hind-wing* greyish-white, with the margin suffused with pale brown; ciliæ white; thorax and abdomen greyish-brown.

a. b. c. Java. From Dr. Horsfield's Collection.
d. e. N. India. Presented by General Hearsey.

The larva and cocoon of *Selepa Celtis* are figured on Plate XVI., figs. 8, 8*a*, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on *Lagerstræmia* and *Celtis*."—(Grote, MS. Note.)

The transformations also observed in Java by Dr. Horsfield, where it "feeds on the *Assem* (*Tamarindus indicus*). May."—(Horsfield, MS.)

Stirps III.—LARVÆ URSINÆ.

The peculiar mark of this stirps is the great and nearly uniform length of the silken hairs, arising from a common base along the entire surface of the segments, which gives them a shaggy appearance; whence the name *Ursinæ* is derived. Metamorphosis: — Cocoon of a somewhat dense silken and hairy texture. The perfect insect has narrow or large broad wings; flies by day or in the evening; antennæ bipectinated in the male, minutely so or biserrated in the female, or filiform in both sexes; proboscis short, or obsolete; abdomen of male slender, of female stout.

This stirps comprises the most beautiful moths of the whole tribe, which are denominated in the Wien. Verz. as "*Papiliones nobiles.*"

PHALÆNA, *sect.* BOMBYCES, *pt. Linnæus, S. N.* I. II. (1767).

BOMBYCES (*Larvæ* F. E. CELERIPEDES *et* URSINÆ), *Denis et Schiffermüller, Wien. Verz. pp.* 52, 54 (1776).

BOMBYX, *pt. Haworth, Lep. Brit. pp.* 76, 78 (1803).

NOCTUO-BOMBYCITES, *pt. Latreille, Gén. Crust. et Ins.* IV. *pp.* 190, 219 (1809).

BOMBYCIDÆ (*Stirps* I. FASCICULATÆ *pt.*), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 24, 27 (1828).

ARCTIIDÆ, *pt. Leach, Edinb. Encycl. p.* (1815). *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 54 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 49 (1850). *Westwood, Intr.* II. *p.* 384 (1840).

BOMBYCIDA, *Duncan, in Brewster's Edinb. Encycl.* IX. *p.* 132 (1830).

ARCTIÆ, *pt. et* LARENÆ, *pt. Newman, Sph. Vesp. p.* 44 (1832).

ARCTIADÆ, *Swainson, Cabinet Cyclop. p.* 106 (1840).

CHELONIDES, *Boisduval, Ind. Méth. p.* 61 (1840).

ARCTIITES, *pt. Newman, Entom. Mag.* II. *p.* 383 (1834); id. *Hist. of Ins. 2nd edit. p.* 212 (1841). *Blanchard, Hist. Nat. des Ins.* II. *p.* 362 (1845).

CHELONIDI, *Stephens, Catal. Brit. Lep. Brit. Mus. p.* 52 (1850).

ARCTIIDÆ, LIPARIDÆ, *pt. et* DREPANULIDÆ, *pt. Walker, List Lep. Het. Brit. Mus.* (1855).

CHELONIDÆ, *pt. Stainton, Manual Brit. Lep. pp.* 107, 112 (1856).

LIPARIDINA, *pt. et* ARCTIOIDEA, *Herr. Schäffer, Lep. Exot. Spec. Nov. pp.* 69, 71 (1858).

Genus SPILOSOMA, *Stephens.*

Spilosoma, *Stephens, Ill. Brit. Ins. Hav t.* II. *p.* 74 (1829). *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 663.
Phalæna-Bombyx, *pt. Linnæus.*
Arctia, *pt. Schrank.*
Bombyx, *pt. Fabricius.*
Estigmene, *pt. Hübner.*

853. *SPILOSOMA MACULIFASCIA, Walker* (*Plate* IXa, *fig.* 10, ♀).

♀ Spilosoma maculifascia, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 676 (1855).

♂ Spilosoma conspureatum, *Walker*, id. *pt.* VII. *p.* 1698 (1856).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Spil. maculifascia* are figured on Plate XVI., figs. 9, 9a, from Java. "Feeds on the *Dadap* (*Convolvulus sp.*——), *Dioscorea oppositifolia*, and a species of *Erythrina*. December and January. Common."—(Horsfield, MS.)

854. *SPILOSOMA PUNCTATA, Moore.*

Spilosoma punctata, n. sp. — Pale testaceous; *fore-wing* with a black basal, two costal, and a minute discal dot; from middle of posterior margin extend a series of dots obliquely upward, also two dots near the base of the margin, some indistinct dots near the apex: *hind-wing* with a black discal dot, and dots from near the anal angle; abdomen deep yellow, with a series of dorsal and lateral black dots, also two series of smaller dots beneath. Female without the costal dots, the apical dots on the *fore-wing* and those on the *hind-wing* more distinct. In some specimens the dots are less distinct. Antennæ black, but white at the base and tip; palpi black above; legs mostly black. Expanse of male 1¼ in., of female 1⅝ in.

a. b. c. ♂ ♀. Java. From Dr. Horsfield's Collection.

d. ♂. N. India. Presented by General Hearsey.

e Darjeeling. From Indian Collection, Exposition Universelle at Paris 1855

Remark.—This species is closely allied to *Spil. obliqua*, Walker, List Lep. Het. Brit. Mus. pt. III. p. 679, from Australia.

855. *SPILOSOMA SUFFUSA, Walker.*

Spilosoma suffusa, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 677 (1855).

a. b. c. ♂ ♀. Punjab. Presented by General Hearsey.
d. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva and pupa of *Spil. suffusa* are figured on Plate XVI., figs. 10, 10*a*, copied from Capt. Mortimer Slater's original drawings.

856. *SPILOSOMA GOPARA, Moore* (*Plate* IX*a*, *fig.* 11).

Spilosoma Gopara, n. sp.—Female, dull testaceous; *fore-wing* with a black dot at the base, another on the costa about one-fourth from the base, a smaller dot above the extremity of the cell, with two below it within the cell; two geminated dots near exterior margin towards the apex, a dot near base of posterior margin, and an oblique row of dots upward from the middle of the latter margin: *hind-wing* testaceous-yellow, with a large basal black patch, four rather large spots from anal angle, and a dot near apical angle. Expanse 2⅛ in.

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

857. *SPILOSOMA ABDOMINALIS, Moore.*

Spilosoma abdominalis, n. sp.—Female, pale testaceous; *fore-wing* with a black dot on the costa one-fourth from the base, and a curved black streak on the middle of posterior margin; *hind-wing* testaceous-white, with a black dot near middle of the anterior margin; antennæ and palpi black; abdomen above red, with a dorsal and lateral row of black spots; head, thorax, and body beneath pale testaceous, the latter with a side-row of black spots parallel with those above; legs with the femur above red and tipped with black, testaceous beneath; tibia and tarsus blackish. Expanse 2¼ in.

a. ♀. N. India. Presented by Col. Buckley.

Genus CYCNIA, *Hübner.*

CYCNIA, *Hübner, Verz. bek. Schmett. p.* 184 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 680.

DIAPHORA, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 77 (1829).

PHALÆNA-BOMBYX, *pt. Linnæus.*

BOMBYX, *pt. Fabricius.*

EUPREPIA, *pt. Ochsenheimer.*

ARCTIA, *pt. Schrank.*

CHELONIA, *pt. Godart.*

858. *CYCNIA PUNCTIVAGA, Walker.*

♀ Cycnia punctivaga, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 682 (1855).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus ARCTIA, *Schrank.*

ARCTIA, *Schrank, Faun. Boica,* II. *pt.* II. *p.* 152 (1802). *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 594.

EUPREPIA, *pt. Ochsenheimer.*

CHELONIA, *pt. Latreille.*

859. *ARCTIA IMBUTA, Walker.*

Arctia imbuta, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 614 (1855).

a. ♂. Darjeeling. From Messrs. Schlagintweit's Collection.

860. *ARCTIA DIVISA, Walker.*

Arctia divisa, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 614 (1855).

a. ♀. N. India. Presented by Col. Buckley.

861. *ARCTIA STRIGATULA, Walker* (*Plate* IX*a, fig.* 12, ♂; 12*a*, ♀).

♂ ♀ Arctia strigatula, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 613 (1855).

Var. ♀ Opilo omnia rubicens, *Walker*, id. *p.* 677 (1855).

a. b. c. d. e. f. g. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Arctia strigatula* are figured on Plate XVI., figs. 11, 11*a*, from Java. "Feeds on *Dioscorea oppositifolia* and other plants. Very abundant."—(Horsfield, MS.)

862. *ARCTIA LANDACA, Moore.*

Arctia Landaca, n. sp.—Male and female, testaceous-brown; *fore-wing* with two indistinct darker zigzag slightly-curved lines across the disc,—the first one-third from the base, the second one-third from the apex; also some minute black discal dots and a submarginal series of indistinct dark spots: *hind-wing* with indistinct discal dot and narrow submarginal line; palpi, tibia, and tarsus, blackish; abdomen reddish, with a blackish dorsal and lateral line. Expanse of male 1⅜ in., of female 1⅝ in.

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus ALOPE, *Walker.*

ALOPE, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 620 (1854).

863. *ALOPE OCELLIFERA, Walker.*

Alope ocellifera, *Walker, List Lep. Het. Brit. Mus. pt.* II. *p.* 620 (1854).

c. ♂. Madras. From Capt. Jones's Collection.

b. ♂. N. India. Presented by Gen. Hearsey.

c. d. e. f. ♀. N. India. Presented by Col. Buckley.

g. h. i. j. var. ♀. Canara. Presented by S. N. Ward, Esq.

Genus PHRAGMATOBIA, *Stephens.*

PHRAGMATOBIA, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 73 (1829). *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 628.

PHALÆNA-BOMBYX, *pt. Linnæus.*

864. *PHRAGMATOBIA BUANA, Moore.*

Phragmatobia Buana, n. sp.—*Fore-wing* ferruginous-brown; *hind-wing* fuliginous, with paler ciliæ; antennæ brown; head, thorax, and anal tuft, pale ferruginous; abdomen above brown, beneath and legs very pale ferruginous; tarsi yellowish. Expanse 1 in.

a. ♂. Java. From Dr. Horsfield's Collection.

Genus ALPHÆA, *Walker.*

ALPHÆA, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 683 (1855).

865. *ALPHÆA FULVOHIRTA, Walker.*

Alphæa fulvohirta, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 684 (1855).

a. b. c. d. Darjeeling. From Messrs. Schlagintweit's Collection.

Genus HYPERCOMPA, *Stephens.*

HYPERCOMPA, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 67 (1829). *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 647.

PHALÆNA-NOCTUA, *pt. Linnæus.*

ARCTIA, *pt. Schrank.*

CALLIMORPHA, *pt Latreille.*

EUPREPIA, *pt. Ochsenheimer.*

EUPLAGIA *et* HERACLIA, *pt. Hübner.*

HERACLIA, *Westwood.*

866. *HYPERCOMPA MULTIGUTTATA, Walker.*

Hypercompa multiguttata, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 657 (1855).

a. b. c. d. ♂ ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

867. *HYPERCOMPA IMPERIALIS, Walker.*

Hypercompa imperialis, *Walker, List Lep. Het. Brit. Mus. pt.* III *p.* 655 (1855).

a. b. c. N. India. Presented by Col. Buckley.

d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

868. *HYPERCOMPA PLAGIATA, Walker.*

Hypercompa plagiata, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 655 (1855).

a. ♀. Darjeeling. From Messrs. Schlagintweit's Collection

869. *HYPERCOMPA PRINCIPALIS, Kollar Sp.*

Euprepia principalis, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II *p.* 465, *pl.* 20, *f.* 2 (1844).

Hypercompa principalis, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 653.

a. b. c. N. India. Presented by Col. Buckley.

870. *HYPERCOMPA EQUITALIS, Kollar Sp.*

Euprepia equitalis, *Kollar, in Hügel's Kaschmir*, IV. *pt.* II. *p.* 465, *pl.* 20, *f.* 3 (1844).

Hypercompa equitalis, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 654.

a. Nepal. Presented by the Trustees of the British Museum.

b. c. d. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

871. *HYPERCOMPA LONGIPENNIS, Walker.*

Hypercompa longipennis, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 655 (1855).

a. b. N. India. Presented by Col. Buckley.

Genus AREAS, *Walker.*

Areas, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 658 (1855).

872. *AREAS ORIENTALIS, Walker.*

Areas orientalis, *Walker, List Lep. Het. Brit. Mus. pt* III *p.* 658 (1855).

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

c. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus ALOA, *Walker.*

Aloa, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 699 (1855).

873. *ALOA TRIPARTITA, Walker.*

Aloa tripartita, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 706 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

874. *ALOA BIGUTTATA, Walker.*

Aloa biguttata, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 707 (1855).

a. b. ♀. Canara. Presented by S. N. Ward, Esq.

875. *ALOA KHANDALLA, Moore* (*Plate* IX*a*, *fig.* 13).

Aloa Khandalla, n. sp.—*Fore-wing* black, with a reddish-white stripe from the base curving upward to and terminating on the costal margin before the apex, this stripe having an elbow-spot about the middle of its lower margin, also two reddish-white spots on exterior margin; *hind-wing* reddish-white, with black marginal spots; head, and sides of thorax, reddish-white; abdomen above, red; antennæ, middle of thorax, dot on each shoulder, stripes on abdomen above, and abdomen beneath, black. Expanse of male $1\frac{3}{8}$ in., female $1\frac{5}{8}$ in.

a. ♂. Canara. Presented by S. N. Ward, Esq.

b. c. ♀. Khandalla Hill, Bombay. Presented by Ezra T. Downes, Esq.

876. *ALOA LACTINEA, Cramer Sp.*

Phalæna-Bombyx Lactinea, *Cramer, Pap. Exot.* II. *p.* 58, *pl.* 133, *f. D.* (1779).

Aloa Lactinea, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 702.

Estigmene Lactinea, *Hübner, Verz. bek. Schmett. p.* 184.

Bombyx sanguinolenta, *Fabricius, Ent. Syst.* III. I. *p.* 473. *Donovan, Ins. of India, pl.* 53.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. ♀. Penang. Presented by Dr. Cantor.

f. g. ♂ ♀. N. India. Presented by General Hearsey.

h. ♂. Canara. Presented by S. N. Ward, Esq.

The larva, pupa, and cocoon of *Aloa Lactinea* are figured on Plate XVI., figs. 12, 12*a*, 12*b*, from Java.

Also figured among R. W. G. Frith's drawings, now in the possession of A. Grote, Esq. "Feeds on *Menispermum glabrum*." —(Grote, MS.)

The transformations of this species are also figured among the drawings of Lady Isabella Rose Gilbert.

877. *ALOA CANDIDULA, Walker.*

Aloa candidula, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 704 (1855).

a. b. c. Dukhun. Presented by Col. Sykes.

Genus PHISSAMA, *Moore.*

Amphissa,* *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 684 (1855).

878. *PHISSAMA VACILLANS, Walker* (*Pl.* IX*a*, *fig.* 14, ♂).

♂ Amphissa vacillans, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 685 (1855); id. *pt.* VII. *p.* 1786.

♀ Aloa vacillans, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1702 (1856).

a. b. c. d. e. f. ♂ ♀, and pupa. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Phissama vacillans* are figured on Plate XVI., figs. 13, 13*a*, from Java. "Feeds on the *Uwi* (*Dioscorea oppositifolia*) and the *Galing* (*Cissus sp.*——). February to April." — (Horsfield, MS.)

879. *PHISSAMA TRANSIENS, Walker Sp.*

Spilosoma transiens, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 675 (1855).

a. ♀. Penang. Presented by Dr. Cantor.

Genus CREATONOTUS, *Hübner.*

Creatonotus, *Hübner, Verz. bek. Schmett. p.* 169 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 637.

Phalæna-Bombyx, *pt. Linnæus.*

Bombyx, *pt. Fabricius.*

880. *CREATONOTUS INTERRUPTA, Linnæus Sp.*

Phalæna-Bombyx interrupta, *Linnæus, Syst. Nat.* I. II. *p.* 840 (1767). *Sulzer, Ins. pl.* 22, *f.* 3. *Cramer, Pap. Exot.* II. *p.* 136, *pl.* 185, *f. E.*

Creatonotus interrupta, *Hübner, Verz. bek. Schmett.*

* Previously used in Lepidoptera.

p. 170. *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 638.

Bombyx Francisca, *Fabricius, M nt. Ins.* II. *p.* 131; *Ent. Syst.* III. I. *p.* 480.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. Ceylon. From Jonville's Collection.

f. Penang. Presented by Dr. Cantor.

The larva and pupa of *Creat. interrupta* are figured on Plate XVII., figs. 1, 1*a*, copied from the original drawings made in Canara by S. N. Ward, Esq., of the Madras Civil Service.

Also figured among Capt. Mortimer Slater's drawings, who remarks, in his Notes, "The larva was taken August 6th, 1852, at Mecanmeer, and changed to a pupa on the 7th, the imago emerging on the 14th. The larva spun a very thin hairy cocoon."

881. *CREATONOTUS EMITTENS, Walker.*

Creatonotus emittens, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 638 (1855).

a. ♂. Canara. Presented by S. N. Ward, Esq.

Genus NISAGA, *Walker.*

Nisaga, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 885 (1855).

882. *NISAGA SIMPLEX, Walker.*

Nisaga simplex, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 885 (1855).

a. b. c. d. ♂. Canara. Presented by S. N. Ward, Esq.

Genus DREATA, *Walker.*

Dreata, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 902 (1855).

883. *DREATA UNDATA, Blanchard Sp.*

Bombyx undatus, *Blanchard, in Jacquemont's Voy. dans l'Inde, Zool. Ins. p.* 23, *pl.* 1, *f.* 8 (1844).

Dreata undifera, *Walker, List Lep. Het. Brit. Mus p.* IV. *p.* 901 (1855).

a. ♂. N. India. Presented by Colonel Buckley.

b. *c*. ♂ ♀. Madras. From Capt. J. M. Jones's Collection.

d. ♂. N. India. From Capt. Boys's Collection.

884. *DREATA MUTANS, Walker.*

Dreata mutans, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 904 (1855).

a. *b*. *c*. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

885. *DREATA UDIANA, Moore.*

Dreata Udiana, n. sp.—Male, testaceous-white, each *wing* with an oblique transverse pale double line; antennæ testaceous, with the pectinations pale brown. Female, testaceous-brown, with the oblique transverse double line well defined; antennæ dark brown. Expanse 4 in. to 5¼ in.

a. *b*. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Dreata Udiana* are figured on Plate XVII., figs. 2, 2*a*, from Java. "Feeds on the *Plosso* (*Butea sp.*——). December to February."—(Horsfield, MS.)

886. *DREATA TESTACEA, Walker.*

Dreata testacea, ♂, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 906 (1855).

a. ♂. N. India. Presented by Col. Buckley.

887. *DREATA PETOLA, Moore* (*Plate* Xa, *fig.* 2, ♀).

Dreata testacea, ♀, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 906.

a. *b*. *c*. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva, pupa, and cocoon of *Dreata Petola* are figured on Plate XVII., figs. 3, 3*a*, from Java. "Feeds on the *Olaga* (*Gramen sp.*——). December to February. Not uncommon."—(Horsfield, MS.)

888. *DREATA IMBECILLIS, Walker.*

Dreata imbecillis, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 905 (1855).

a. ♂. Penang. Presented by Dr. Cantor.

889. *DREATA UNDANS, Walker* (*Plate* Xa, *fig.* 1, ♂).

Dreata undans, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 905 (1855).

a. b. c. ♂. Madras. From Capt. J. M. Jones's Collection.

890. *DREATA CITRINA, Walker.*

Dreata citrina, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 905 (1855).

a. ♀. Dukhun. Presented by Colonel Sykes.

891. *DREATA ANADA, Moore.*

Dreata Anada, n. sp.—Testaceous-yellow. Male, *fore-wing* with two transverse brownish lines obliquely across the disc; *hind-wing* also with two transverse lines, the inner line barely perceptible. Female, with the transverse lines darker. Expanse of male 2⅛ in., of female 2⅝ in.

a. ♂. Canara. Presented by S. N. Ward, Esq.

Remark.—Somewhat allied to *Dreata geminata*, Walker, List Lep. Het. Brit. Mus. Pt. IV. p. 907, from Ceylon.

Genus JANA, *Boisduval.*

JANA, *Boisduval, in Herr. Schäffer's Lep. Exot. Spec. Nov. ser.* I. *pl.* 21 (1851). *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 909.

892. *JANA LINEOSA, Walker.*

Jana lineosa, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 912 (1855).

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus TAGORA, *Walker.*

TAGORA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1188 (1855).

893. *TAGORA GLAUCESCENS, Walker.*

♂ Tagora glaucescens, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1188 (1855).

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

894. *TAGORA PATULA, Walker.*

Tagora patula, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1189 (1855).

a. ♂. N. India. Purchased.

895. *TAGORA AMÆNA, Walker* (*Plate* X*a*, *fg.* 3, ♂).

Tagora amœna, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1189 (1855).

Bombyx Orpheus, *Boisduval, MS.*

a. b. c. d. e. f. g. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Tagora amœna* are figured on Plate XVIII., figs. 1, 1*a*, from Java. "Feeds on the *Laban* (*Vitex sp.*——), the *Dadap* (*Erythrina sp.*——), *Piper Betel*, and *Dioscorea*. December to February and March. Abundant in March, 1827." — (Horsfield, MS.)

Genus APHA, *Walker.*

APHA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1180 (1855).

896. *APHA SUBDIVES, Walker* (*Plate* X*a*, *fig.* 4, ♀).

♂ Apha subdives, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1180 (1855).

a. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus GANISA, *Walker.*

GANISA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1190 (1855).

897. *GANISA POSTICA, Walker* (*Plate* X*a*, *fig.* 5).

Ganisa postica, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1190 (1855).

a. ♂. Canara. Presented by S. N. Ward, Esq.

898. *GANISA PLANA, Walker.*

Ganisa plana, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1191 (1855).

a. ♂. Drawing. In the Collection of A. Grote, Esq.

The larva and pupa of *Ganisa plana* are figured on Plate XVIII., figs. 2, 2*a*, copied from the original drawings in the collection of A. Grote, Esq., of Calcutta. "Feeds on *Jasminum*."—(Grote, MS.)

Genus NUMENES, *Walker*.

NUMENES, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 662 (1855).

899. *NUMENES INSIGNIS, Moore* (*Plate* X*a*, *fig.* 6).

Bombyx Silheti,* *Boisduval, MS.*

Numenes Siletti, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 663 (1855).

a. *b*. ♂ ♀. Java. From Dr. Horsfield's Collection.

c. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

900. *NUMENES PATRANA, Moore.*

Numenes Patrana, n. sp.—Testaceous; *fore-wing* suffused with ferruginous, with a black basal oblique streak, three equidistant spots on the costa, and a lunated spot on middle of posterior margin; *hind-wing* brighter, with a lengthened black spot from near the abdominal angle; antennæ, head, palpi, and thorax, dark ferruginous-brown; abdomen and legs testaceous. Expanse 2⅞ in.

a. ♀. Bootan. From Pemberton's Collection.

* This name is inapplicable, the species not being indigenous to *Silhet*.

Stirps IV.—Larvæ CUSPIDATÆ.

PHALÆNA *sect.* BOMBYCES, *pt. Linnæus, S. N.* (1767).

BOMBYCES (*Larvæ* S. T. A. R.), *Denis et Schiffermüller, Wien. Verz.* (1776).

BOMBYCIDÆ (*Stirps* V. CUSPIDATA), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 26, 27 (1828).

BOMBYX, *pt. Haworth, Lep. Brit.* (1803).

BOMBYX, *sect.* LEGITIMÆ, *pt. Latreille.*

NOTODONTIDÆ, *pt. et* PLATYPTERICIDÆ, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 10 (1829); III. *p.* 141 (1831); IV. *p.* 3 (1834).

NOTODONTÆ, *pt. Newman, Sph. Vesp. p.* 42 (1832).

ARCTIIDÆ, *pt. Westwood, Introd.* II. *p.* 384 (1840).

Larvæ greatly diversified in form. In their transformations they present four sections.

SECTION I.

Larvæ with fourteen legs, naked, with one or several dorsal prominences on the anterior segments; anal pro-legs obsolete, replaced by a single projecting tail; has the peculiarity of holding the anterior and posterior segments erect when at rest. Metamorphosis:—Cocoon of a slight silken texture, attached to leaves.

The perfect insect has broad wings, the fore-wings being generally falcate at the tips; flies by twilight and darkness; antennæ pectinated or bipectinated in the male, less so or filiform in the female; proboscis short or invisible.

BOMBYCES (*Larvæ* T. CUSPIDATÆ, *pt.*), *Denis et Schiffermüller, Wien. Verz. p.* 64 (1776).

PHALÆNITES, *pt. Latreille, Gén. Crust. et Ins.* IV. *pp.* 101, 226 (1809).

PLATYPTERICIDA, *pt. Duncan, in Brewster's Edinb. Encycl.* IX. *p.* 134 (1830).

PLATYPTERICIDÆ, *Stephens, Ill. Brit. Ins. Haust.* III. *p.* 141 (1831); id. IV. *p.* 3 (1834); id. *Catal. Brit. Lep. Brit. Mus. p.* 228 (1850). *Duponchel, Catal. Méth. Lép. Eur. p.* 85 (1846).

NOTODONTÆ, *pt. et* NOTODONTITES, *pt. Newman, Sph. Vesp. p.* 42

(1832); id. *Entom. Mag.* II. *p.* 383 (1834); id. *Hist. of Ins.* 2*nd edit. p.* 213 (1841).

DREPANULIDES, *Boisduval, Ind. Méth. Lép. Eur. p.* 82 (1840).

PLATYPTERYCIDES *et* PLATYPTERYCITES, *Blanchard, Hist. Nat. des Ins.* II. *p.* 364 (1845).

DREPANULIDÆ, *pt. Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1158 (1855).

PLATYPTERIGIDÆ, *Stainton, Manual Brit. Lep. pp.* 107, 160 (1856).

CILICINA, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 60 (1858).

Genus DREPANA, *Schrank.*

DREPANA, *Schrank, Faun. Boica,* I. II. *p.* 155 (1802). *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1158.

FALCARIA, *Haworth, Lep. Brit.* (1803).

PRIONIA, SYSSAURA, *et* DREPANIA, *Hübner, Verz. bek. Schmett.* (1816).

PLATYPTERYX, *Laspeyres, pl.* 27 (1803). *Stephens.*

GEOMETRA, *pt Linnæus.*

PHALÆNA, *pt. Fabricius.*

901. *DREPANA ARGENTEOLA, Moore.*

Drepana argenteola, n. sp.—Testaceous; *fore-wing* with an oblique dark-brown discal spot, an oblique narrow brown submarginal band, between which and the exterior margin is a series of minute black dots; all the veins and oblique band minutely spangled with silvery scales; *hind-wing* with a transverse brown discal band; ciliæ, brown. Expanse $1\frac{3}{8}$ in.

a. Java. From Dr. Horsfield's Collection.

902. *DREPANA RAFFLESI, Moore* (*Plate* XI*a, fig.* 1).

Drepana Rafflesi, n. sp.—UPPER-SIDE ochreous-yellow; *fore-wing* with two brown dots at the extremity of the cell; ciliæ of both wings glaucous; abdomen with some dorsal and lateral brown spots. UNDER-SIDE paler; *fore-wing* with an oblique brown discal line; *hind-wing* with an interrupted broad brown submarginal band; ciliæ of both wings glaucous; palpi brown, with black tips. Expanse 2 in.

a. ♂. Sumatra. From Sir Stamford Raffles's Collection.

Genus ORETA, *Walker*.

ORETA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1166 (1855).

903. *ORETA EXTENSA, Walker* (*Plate* XIa, *fig.* 2, ♀).

♂ Oreta extensa, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1166 (1855).

♀ Oreta suffusa, *Walker*, id. *p.* 1167 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Oreta extensa* are figured on Plate XVIII., figs. 3, 3*a*, from Java. "Feeds on a species of *Ixora*, bearing the native name of *Sikattan*. April and May. Not very common."—(Horsfield, MS.)

SECTION II.

Larva with fourteen legs, naked, the segments smooth, with an anterior dorsal prominence, or with several acute dorsal prominences; the anterior legs very long; anal pro-legs obsolete, replaced by two projecting tails: has the peculiarity of holding the posterior, or *both* anterior and posterior segments erect when at rest. Metamorphosis:—Cocoon generally of a hard texture.

The perfect insect has long and somewhat narrow wings; flies by night; antennæ bipectinated in both sexes, or only so in the male, with the tip filiform, and the female filiform throughout; proboscis very short, or invisible; legs densely pilose.

BOMBYCES (*Larva* S. FURCATÆ), *Denis et Schiffermüller, Wien. Verz. p.* 63 (1776).

BOMBIA, *pt. Haworth, Lep. Brit. p.* 76 (1803).

BOMBYCITES, *div.* LEGITIMÆ, *pt. Latreille, Gén. Crust. et Ins.* IV. *p.* 217 (1809).

NOTODONTIDÆ, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 10 (1828); id. *Catal. Brit. Lep. Brit. Mus. p.* 37 (1850). *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 977 (1855). *Stainton, Manual Brit. Lep. pp.* 107, 114 (1856).

BOMBYCIDA, *pt. Duncan, in Brewster's Edinb. Encycl.* IX. *p.* 131 (1833).

NOTODONTÆ, *pt. Newman, Sph. Vesp. p.* 42 (1832).

NOTODONTITES, *pt. Newman, Entom. Mag.* II. *p.* 383 (1834); id. *Hist.*

of Ins. 2nd edit. p. 213 (1841). *Blanchard, Hist. Nat. des Ins.* II. *p.* 365 (1845).

NOTODONTIDES, *pt. Boisduval, Ind. Méth. Lép. Eur. p.* 84 (1840). *Blanchard, Hist. Nat. des Ins.* II. *p.* 365 (1845).

DICRANURIDÆ, *Duponchel, Catal. Méth. Lép. Eur. p.* 86 (1846).

DICRANURIDI, *Stephens, Catal. Brit. Lep. Brit. Mus. p.* 38 (1850).

Genus CERURA, *Schrank.*

CERURA, *Schrank, Faun. Boica,* I. II. *p.* 155 (1802). *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 15. *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 982.

FURCULA, *Lamarck, Invert.* III. *p.* 581 (1816).

PANIA, *Dalman, Anal. Ent. p.* 92 (1823).

DICRANURA, *Latreille, F. N. p.* 473 (1825).

HARPYIAS, *Hübner, Verz. bek. Schmett. p.* 148 (1816).

PHALÆNA-BOMBYX, *pt. Linnæus, S. N.* (1767).

904. *CERURA LITURATA, Walker.*

Cerura liturata, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 988.

a. b. ♂. N. India. Presented by Colonel Buckley.

Genus THIACIDAS, *Walker.*

THIACIDAS, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1027 (1855).

905. *THIACIDAS POSTICA, Walker.*

Thiacidas postica, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1028 (1855).

a. ♂. Canara. Presented by S. N. Ward, Esq.

Genus STAUROPUS, *Germar.*

STAUROPUS, *Germar, Prod. p.* 45 (1811). *Walker, List Lep. Het Brit. Mus. pt.* V. *p.* 1019.

TERASION, *Hübner, Verz. bek. Schmett. p.* 117 (1816).

BOMBYX, *pt. Linnæus.*

HARPYIA, *pt. Ochsenheimer.*

906. *STAUROPUS ALTERNUS, Walker.*

♀ Stauropus alternus, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1020 (1855).

a. b. ♀. Java. From Dr. Horsfield's Collection.
c. ♂. Canara. Presented by S. N. Ward, Esq.

The larva and pupa of *St. alternus* are figured on Plate XVIII., figs. 4, 4*a*, from Java. "Feeds on a species of *Mangifera*, bearing the native name of *Ingas*, and on *Tamarindus*. March. Scarce."—(Horsfield, MS.)

The larva of this species is also figured among the drawings of E. L. Layard, Esq., from Ceylon.

Genus NETRIA, *Walker*.

NETRIA, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1504 (1855).

907. *NETRIA VIRIDESCENS*, *Walker* (*Plate* XI*a*, *fig.* 3).

♀ Netria viridescens, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1504 (1855).

a. b. c. ♂ ♀. Java. From Dr. Horsfield's Collection.

SECTION III.

Larva with sixteen legs, elongate, attenuated anteriorly, naked, or subpilose, with or without a single or double conical dorsal prominence on the twelfth segment, or with a conical dorsal prominence on the fifth, sixth, seventh, eighth, and twelfth segments: some have the peculiarity of holding the posterior segments erect when at rest. Metamorphosis:—Cocoon slight, sometimes subterranean.

The perfect insect has long but somewhat broad wings, the inner margin of the fore-wing being in some dentate; flies by day or night; antennæ bipectinated in the male, less so or simple in the female; proboscis very short, medial, or invisible; legs densely pilose.

BOMBYCES (*Larvæ* A. *pt. et* R. SPHINGIFORMES *et* GIBBOSÆ), *Denis et Schiffermüller, Wien. Verz. pp.* 48, 62 (1776).

BOMBYX, *pt. Haworth, Lep. Brit. pp.* 76, 95 (1803).

NOTODONTIDÆ, *pt. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 10 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 37 (1850). *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 977 (1855). *Stainton, Manual Brit. Lep. pp.* 107, 114 (1856).

NOTODONTÆ, *pt. et* NOTODONTITES, *pt. Newman, Sph. Vesp. p.* 12 (1832); *Entom. Mag.* II. *p.* 383 (1834); id. *Hist. of Ins. 2nd ed. p.* 213 (1841).

NOTODONTIDES, *pt.* ENDROMIDES, *Boisduval, Ind. Méth. Lép. Eur. pp.* 74, 84 (1840).

NOTODONTITES, *pt. et* ENDROMITES, *Blanchard, Hist. Nat. des Ins.* II. *pp.* 361, 365 (1845).

NOTODONTIDI *et* ENDROMIDI, *Stephens, Catal. Brit. Lep. Brit. Mus. pt.* 40, 44 (1850).

ENDROMIDÆ, *Duponchel, Catal. Méth. Lép. Eur. p.* 79 (1846). *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1384 (1855). *Stainton, Manual Brit. Lep. pp.* 107, 158 (1856).

BOMBYCIDÆ, *pt. Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1386 (1855).

NOTODONTINA, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 66 (1858).

Genus ROSAMA, *Walker.*

ROSAMA, *Walker, List Lep. Het Brit. Mus. pt.* V. *p.* 1066 (1855).

PTERODONTA, *Guenée, MS. Mus. India House.*

908. *ROSAMA STRIGOSA, Walker* (*Plate* XIa, *fig.* 4).

Rosama strigosa, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1066 (1855).

Pterodonta aurimacula, *Guenée, MS. Mus. India House.*

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Rosama strigosa* are figured on Plate XVIII., figs. 5, 5*a*, from Java. "Feeds on a species of *Hedysarum*, bearing the native name of *Oppo-oppo*. February."—(Horsfield, MS.)

SECTION IV.

Larva with sixteen legs, naked, elongate, with the third and fourth segments thickened; head small; a dorsal spine on the twelfth segment only, or, as in *Bombyx Huttoni* (according to Capt. Hutton), covered throughout with long spines. Metamorphosis: — Cocoon oval, of the finest silken texture.

The perfect insect has short broad wings, the fore-wing being moderately falcate at the tip; flies by night; antennæ bipectinated; proboscis obsolete, or very short; body short, thick; legs pilose.

BOMBYCES (*Larva* A. *pt.* SPHINGIFORMES), *Denis et Schiffermüller, Wien. Verz. p.* 48 (1776).

BOMBYCIDÆ, *pt. Westwood, Intr.* II. *p.* 379 (1840). *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1386 (1856).

Genus BOMBYX, *Schrank.*

BOMBYX, *Schrank, Fat.n. Boica,* II. *pt.* II. *p.* 150 (1802). *Hübner, Verz. bek. Schmett. p.* 190 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1505.

PHALÆNA-BOMBYX, *pt. Linnæus.*

BOMBYX, *pt. Fabricius.*

SERICARIA, *pt. Latreille.*

909. *BOMBYX MORI, Linnæus.*

Phalæna-Bombyx Mori, *Linnæus, Syst. Nat.* I. II. *p.* 817 (1767); *Amæn. Acad.* IV. *p.* 563; *Faun. Suec. p.* 832. (*Aldrov. Ins. p.* 280. *Albin, Ins. pl.* 12, *f.* 16. *Réaum. Ins.* II. *pl.* 5, *f.* 2. *Roësel, Ins.* III. *pl.* 7, 8).

Bombyx Mori, *Fabricius, Spec. Ins.* II. *p.* 180; *Mant. Ins.* II. *p.* 114; *Ent. Syst.* III. I. *p.* 431. *Godart, Lép. de France,* IV. *p.* 153, *pl.* 11, *f.* 3, 4. *Helfer, Journ. Asiatic Soc. Bengal,* VI. *p.* 40. *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1505. *Royle, Report on the Paris Univ. Exhib. pt.* III. *p.* 216.

Sericaria Mori, *Blanchard, Gay, Hist. de Chile, Zool.* VII. *p.* 55.

The common Chinese silkworm of commerce.

PAT of Bengal, *Royle.*

a. b. ♂ ♀. Bred in England. Presented by Mr. F. Moore.

In a "Dissertation on the Silk Manufacture and the Cultivation of the Mulberry," translated from the Chinese works of Tseu-kwang-k'he, called also Paul Siu, a Colao, or Minister of State, in China, and recently published at Shanghæ, and reprinted in 1858 at Madras, it is stated that "the earliest allusion to the mulberry and silk met with in the ancient writings of the Chinese is in the Historical Classic, a work which existed before the days of Confucius, because it is quoted by him, and which embraces the history of China from (B.C. 2356, to B.C. 722) a period of 1,634 years. In the former part of that period, we have the allusions referred to recorded in the section called the tribute of Yû, who flourished 2,200 years before Christ. In his days the mulberry is spoken of as a well-known production, and silk

as obtained therefrom; so that it must have been discovered before his days. The usual tradition is, that it was discovered during the reign of Hwângté (B.C. 2640), by his queen.

The passages in the Historical Classic, in which references to the mulberry and silk are made, are as follows:—In giving an account of Yen-chow, the south-western part of the modern Shan-tung, the writer says, "The mulberry region having been supplied with silkworms, the people descended from the hills, and dwelt in the plains." On this the commentator remarks:—"The nature of the silkworm is to abhor dampness; hence is was not till the waters were abated that the silkworms could be reared. The nine regions of China equally depended upon this source of wealth; but the Yen province alone is mentioned, because it was best adapted for the mulberry." The Classic goes on to say, that the tribute of Yen-chow consisted in varnish and silk, while their tribute-baskets were filled with wove stuffs of various colours." (*See* translation of the Shoo-king, pp. 91, 92.)

In speaking of the production of Tsing-chow, the north-eastern part of Shan-tung, the Classic says, that "from the valley of the Taé mountain they brought silk and hemp; while their tribute-baskets were stored with the wild mulberry and silk." The silk produced from the mountain mulberry is said by the commentator to be so tenacious, that it was peculiarly adapted for harps and guitars. (*See* translation of the Shoo-king, p. 93.)

Black silk and chequered sarcenets are spoken of as the production of Tseu-chow, the southern part of Shan-tung, and the northern part of Këang-soo. (*See* translation of the Shoo-king, p. 96.)

The productions of King-chow, the modern Hoôk-wang, where silk has since been cultivated to a great extent, are spoken of as consisting of black and red silks, with silk fringes. (*See* translation of the Shoo-king, p. 101.)

The next Classic in which we find any reference to the silkworm is the Chow-le, or Account of the Ceremonies of the Chow dynasty, where it is said, that "the officer who adjusted the price of horses forbade the people to rear the second breed of silkworms in one season," because, in accordance with the views of astrologers, the horse belonged to the same constellation with the silkworms; and they were therefore considered of the same origin. Conceiving that two things of like nature could not prosper at the same time, the Chinese forbade the rearing of the second breed of silkworms, lest it

should be of some disadvantage to the horses. However absurd this notion, it shows, at the least, that the rearing of silkworms was a common practice at that period.

After this, we meet with frequent references to this subject in the Le-ke Book of Ceremonies. This book was written partly in the Tsin dynasty (B.C. 204), and partly in the Hàn dynasty (B.C. 135), and gives an account of the ceremonies observed by the Chinese in very early antiquity. In the 6th section of this work, entitled Yue-ling, we meet with the following directions:—

"In the first month of spring, orders were issued to the forester not to cut down the mulberry-trees; and when the cooing doves were observed fluttering with their wings, and the crested jays alighting upon the mulberry-trees, people were to prepare the trays and frames for the purpose of rearing the silkworms.

"In the spring season, when the empress and her ladies had fasted, they proceeded to the east, and personally engaged in picking the mulberry-leaves. On this occasion, the married and single ladies were forbidden to wear their ornaments, and the usual employments of females were lessened, in order to encourage attention to the silkworms. When the rearing of the silkworms was completed, the cocoons were divided (for reeling), and the silk weighed (for weaving), each person being rewarded according to her labour, in order to provide dresses for the celestial and ancestorial sacrifices; in all this none dared indulge in indolence."

From another passage of the same section we learn, that in "the last month of summer, the order was given to the female officers to dye the silk of various colours, in order to weave checkered sarcenets, comprising black and white, black and green, green and red, with red and white checks! all which was to be done according to the ancient rule, without the least variation; the black, yellow, azure, and red tints were all to be correct and good, without the least fault, in order to provide dresses for the celestial and ancestorial sacrifices, and standards for distinguishing the high and low degrees."

In the 24th section of the same book, on sacrificial rites, we read, that "in ancient times the emperor and his princes had a public mulberry-garden and a silkworm establishment erected near some river. On the morning of the first day of the third month of spring, the sovereign, wearing a leather cap and a plain garment, ascertained by lot the chief of his three queens, with the most honourable amongst his concubines, and caused them to attend to the rearing of the silkworms in the above-named establishment. They then brought the

eggs of the worms and washed them in the river above alluded to; after which they picked the mulberry-leaves in the public garden, and aired and dried them, in order to feed the worms.

"When the season was over, the royal concubines, having completed the business of rearing the silkworms, brought the cocoons to show them to the prince, when he presented the cocoons again to his consort; whereupon his consort said, 'This is the material of which your highness's robes are to be formed.' Having said which, she covered herself with her robe, and received the cocoons. On this occasion, the ladies of the court were honoured with the present of a sheep. This was the mode in which the presentation of the cocoons was anciently conducted."

Hawae-nan-tsze, in the silkworm Classic, says, that "Se-ling-she, the principal queen of Hwang-te (B.C. 2640), was the first to rear silkworms; and the Hwang-te was induced to invent robes and garments from this circumstance. Afterwards, when Yu regulated the waters (B.C. 2200), mention is made, in his work on the tribute, of the land adapted for the mulberry-tree having been supplied with 'silkworms,' from which time the advantage thereof gradually increased. In the Yue-ling section of the Le-ke, it is said, that in the last month of spring the trays and frames, with the square and round baskets, were to be got in readiness for the rearing of the worms, &c. It appears, on examination, that the queens and wives of the nobles, through successive generations, personally attended to the rearing of the silkworms; how much more, then, ought the wives of the common people to busy themselves in the same. All this alludes to what was done in the Chow dynasty, B.C. 1000. It is recorded of Wán-te, of the former Hàn dynasty (B.C. 150), that he commanded his empress personally to attend to the picking of the mulberry-leaves, in order to prepare the sacrificial garments. King-té (B.C. 130) enjoined the same thing on his queen, that she might be an example to the empire. In the time of Yuén-té (B.C. 20), the empress-dowager Wang visited the silkworm establishment, leading on the empress and the different ladies of the court, to gather mulberry-leaves. In the time of Ming-té (A.D. 70), the empress, with the ladies of the princes, attended to the rearing of the silkworms. During the Wei dynasty, in the reign of Wàn-té (A.D. 250), the empress attended to the silkworms at the northern border, according to the regulations of the Chow dynasty. During the Tsin dynasty, in the reign of Wú-té (A.D. 280), the silkworm palace was built, and the empress personally attended to the business of rearing the silkworms, as had been the practice

during the two preceding dynasties. During the Súng dynasty, in the reign of Heaóu-woó. (A.D. 460), the silkworm monastery was built, and the empress personally gathered the mulberry-leaves, as had been the practice in the preceding dynasty.

"In the northern Tsê dynasty (A.D. 490), a silkworm palace was erected, and the empress went in person to gather the mulberry-leaves. According to the regulations of the Sûy dynasty (A.D. 620), the empress went to the appointed place to gather the mulberry-leaves. During the Tâng dynasty, in the reign of Chin-kwan (A.D. 650), the empress did the same. In the first year of the following monarch, Hëën-k'hing (A.D. 655), and in the reign of Këen-yuen (A.D. 747), the empresses all attended to the silkworm ceremony. At the same time a decree was issued, requiring that the silkworms should be fed in the palace, when the empress went in person to inspect them. During the Súng dynasty, in the reign of K'hae-paòu (A.D. 960), on recording the ceremonies performed at the celestial sacrifice, the prayer is given which was offered when the empress went in person to rear the silkworms. From all which we perceive that the empresses through successive dynasties attended in person to the business of rearing the silkworms. By selecting these extracts from the historical documents, we have set this matter in a very clear light, and placed the whole at the head of our treatise."

The essay from which the preceding extract has been made, contains many other interesting details, showing the importance attached in the earlier periods of Chinese history to the manufacture of silk generally, and especially to the cultivation of the mulberry in its various modifications.

"The culture of the mulberry silkworm" (*Bombyx Mori*), says Dr. Royle (Report on the Paris Universal Exhibition, pt. III. p. 216), "was early introduced into India from China, where it flourishes chiefly about Nankin, or in 32° of north latitude; but in India none of the old silk filatures extend to beyond 26 of north latitude. This can, I conceive, be ascribed only to the excessive heat and dryness of the North-western provinces of India being unsuitable to the animal, besides producing a drier and harder leaf than it likes for its food."

The Rev. W. Fox, curate of West Malling, Kent, records the fact (see *Athenæum* for October 16th, 1858) of the occurrence of *Bombyx Mori* having been found in a wild state in England, and gives the following remarks:—"On the 10th July, 1858, a number of silkworms, estimated at from eighty to one hundred, were found under

a hedge in a place called Banksfield, near West Malling, not far from Maidstone, Kent. There was no appearance of the insects having been scattered accidentally in the place, but, on the contrary, every indication of their having been hatched and sustained for some time in the spot where they were discovered. The leaves of several plants in the immediate vicinity were much eaten, showing plainly that the larvæ had for some time been feeding upon them. A bush of the common bramble (*Rubus fruticosus*), among others, had been partially despoiled of its leaves. When discovered, about three-fourths of the whole number had spun their cocoons, which were hanging in all directions upon the weeds and the bramble referred to. Some were just commencing the spinning process, while others were yet in the larva state, and were feeding quietly or roving about in quest of suitable places in which to construct their silken cells. Both the silk cocoons and the remaining larvæ were subjected to a close examination by the aid of a microscope, and were compared with other silkworms and cocoons which had been bred or formed under the shelter of a house; but no perceptible difference of species could be discovered."

910. *BOMBYX HUTTONI, Westwood.*

Bombyx Huttoni, *Westwood, Cabinet Orient. Ent. p.* 26, *pl.* 12, *f.* 4 (1847). *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1506.

? Bombyx religiosa, *Helfer, Journ. Asiatic Soc. Bengal,* VI. *p.* 41, *pl.* 6 (1837).

? The Joree Silkworm Moth, *Helfer.*

? The Deo-mooga Silkworm, *Hugon, J. A. S. Beng.* VI. *pp.* 32, 41.

a. ♀. Mussooree. Presented by J. O. Westwood, Esq.

"This species," says Capt. Hutton, "is an inhabitant of these hills (Mussooree), occurring abundantly from the Doon upwards to at least 7,000 feet; and the caterpillar, like that of *B. Mori*, feeds on the leaves of the wild mulberry, which grows here in our forests. Unlike the larva of *B. Mori*, however, the present species has the caterpillar covered with long spines, although in colouring and shape there is great similarity between the two. The cocoon is spun in the leaf, which is drawn round it, and the silk is very fine, and of a very pale-yellow tint. I discovered this species on the 7th May, 1842, on some mulberry-trees growing at an elevation of about 6,500 feet above

the sea, with a southern aspect. Some of the caterpillars were of a large size, and nearly full-grown at this time, whilst others were in all their intermediate stages of growth. The caterpillar is of a pale yellowish cream-colour, mottled or marbled down the back and sides with a mixture of grey, yellow, and rufous or brownish lines; the anterior segments of the body are mottled above with livid grey, and ornamented with four blackish oblong spots or ocelli placed obliquely; along the back are two rows of long black spines curving backwards, and on the anal segment is one long spine in the middle; the two anterior pair of spines spring from the ocelli, and the last pair are curved forwards instead of backwards like the rest; there is also on each side a row of short spines springing from the base of the true legs. The anterior segments swell up into a hump, like those of the larva of *B. Mori*. As the caterpillar becomes mature, the rufous colouring fades away, and gives place to a mottling of pale livid grey; the head is also mottled. It grows to about 2½ inches in length, and spins in the leaf early in May. They are double-brooded, for mine all hatched in June, and deposited their eggs, a few of which produced caterpillars that year; but the greater number remained until the following spring."—(Westwood's Cab. Orient. Ent.)

Capt. Hutton, in reply to some inquiries by J. Bashford, Esq. relating to this species, states (Journ. Agri-Horticult. Soc. India, IX. p. 391, 1857), "that *Bombyx Huttoni* cannot be treated like the domestic kinds, but must (at least for the present) be reared *upon the trees*. The worms will not remain in the trays, nor even upon twigs placed in water, when once the freshness of the leaf is gone. On the tree it is perfectly free from restlessness, and saves a vast expense in feeding, besides possessing the advantage of always having perfectly fresh food at command, an essential point in forming good silk, as the quality of this substance must always be greatly influenced by the healthy secretions of the animals producing it.

"Cocoons of *B. Huttoni* produced in the house from worms placed upon small branches set in jars of water to keep them fresh, are always inferior to those produced upon the trees; and I doubt not you would find this to be the case with the domestic species in Bengal."

The Agri-Horticultural Society of India has lately reported most favourably on the silk of this species, which has been brought into notice by Capt. Hutton. The worm spins in all weathers, whereas the common silkworm (*B. Mori*) is apt to be thrown off work by a passing cloud. It is thought that this new silkworm may prove

commercially important, and Government is solicited to institute experiments regarding its productive powers. (*Vide* Madras Journ. l, March, 1857, p. 268.)

Remark.—After examination of typical specimens of *B. Huttoni*, and comparing them with the descriptions of Dr. Helfer's *B. religiosa*, I am inclined to believe that they are one and the same species.

911. *BOMBYX HORSFIELDI, Moore* (*Plate* XIa, *fig.* 5).

Bombyx Horsfieldi, n. sp.—Female, brownish-grey; *fore-wing* with two transverse slightly-curved brown bands,—the first one-third from the base, the other one-third from the apex, the latter having undulated margins; between the two bands is a grey-centred brown discal spot, a brown streak immediately below the apex, its inner margin pale: *hind-wing* pale ferruginous at the base, a narrow curved submarginal pale line, the veins also pale; abdominal margin with two blackish-brown spots,—one being near its base, the other about its middle. Expanse 2¾ in.

a. ♀. Java. From Dr. Horsfield's Collection.

Genus OCINARA, *Walker*.

Ocinara, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1768 (1856).

912. *OCINARA DILECTULA, Walker*.

♂ Ocinara dilectula, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1768 (1856).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Ocinara dilectula* are figured on Plate XVIII., figs. 6, 6*a*, from Java. "Feeds on a species of *Ficus*, bearing the native name of *Weringin*. April. Not very abundant."—(Horsfield, MS.)

913. *OCINARA LIDA, Moore*.

Ocinara Lida, n. sp.—Male, whitish, wings semi-hyaline; *fore-wing* with a transverse blackish undulated line one-fourth from the apex, the upper portion being dotted with black, its inner margin having a suffused band of very pale greenish-brown, which colour is also suffused below the apex; some indistinct transverse sub-basal zigzag

lines; *hind-wing* with a very pale greenish-brown curved submarginal band, having a brown dot on the abdominal margin; palpi mostly ferruginous; antennæ and body pale testaceous-white. Expanse $1\frac{7}{8}$ in.

a. ♂. Java. From Dr. Horsfield's Collection.

Genus TRILOCHA, *Moore*.

NAPREPA,* *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1152 (1855).

914. *TRILOCHA VARIANS, Walker Sp.* (*Plate* XI*a*, *fig.* 6).

♂ Naprepa varians, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1153 (1855).

a. ♀. Canara. Presented by S. N. Ward, Esq.

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* Mr. Walker had previously used this name. (See List Lep. Het. Brit. Mus. pt. V. p. 1046.)

Stirps V.—Larvæ VERTICILLATÆ.

The larva of this stirps is elongate and robust, presenting the following modifications:—

(*a*) A larva bearing on its entire length short tubercles terminated by a whorl (or verticill) of short star-like diverging hairs (*pilis stellatim divergentibus*).

(*b*) In the genus *Attacus* the larva is armed, in place of the diverging tufts, with long or short fleshy spines.

Metamorphosis:—Cocoon large, of a fine or coarse but firm silken texture, either of a lengthened oval shape and attenuated or pointed at each end, or pyriform or quite oval, exceedingly firm, and attached to a twig by a long silken footstalk.

The perfect insect has very large broad wings, the fore-wings being more or less falcate or rounded at the tips; generally with an ocellus, which is varied in size and form, and whose disc is partially or wholly vitreous; in some genera the hind-wing is produced anally into a long tail. Flight nocturnal; antennæ very deeply bipectinated in the male, with the branches in pairs; less so in the female, with the branches also in pairs or single; proboscis short and distinct, or invisible or obsolete; abdomen small in the male, very large and stout in the female.

Phalæna, *sect.* Attaci, *pt. Linnæus, S. N.* (1767).

Bombyces (*Larva* B. Verticillatæ), *Denis et Schiffermüller, Wien. Verz. p.* 49 (1776).

Bombycidæ (*Stirps* II. Verticillata, *pt.*), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 24, 27 (1828).

Bombyx, *pt. Haworth, Lep. Brit. pp.* 76, 78 (1803).

Bombycites Legitimæ, *pt. Latreille, Gen. Crust. et Ins.* IV. *p.* 217 (1809).

Bombycida, *pt. Duncan, in Brewster's Edinb. Encycl.* IX. *p.* 131 (1830).

Phalænæ *et* Phalænites, *Newman, Sph. Vesp. p.* 45 (1832); id. *Entom. Mag.* II. *p.* 383 (1831); id. *Hist. of Ins. 2nd edit. p.* 212 (1841).

Bombycidæ, *pt. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 35 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 41 (1850) *Westwood, Intr.* II. *p.* 379 (1840) *Swainson, Cabinet Cyclop. p.* 105 (1840).

Saturnides, *Boisduval, Ind. Méth. p.* 73 (1840).
Attacites, *Blanchard, Hist. Nat. des Ins.* II. *p.* 361 (1845).
Attacidæ, *Duponchel, Catal. Méth. Eur. Lép. p.* 78 (1846).
Attacidi, *Stephens, Catal. Brit. Lep. Brit. Mus. p.* 44 (1850).
Saturnidæ, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1198 (1855). *Stainton, Manual Brit. Lep. pp.* 107, 159 (1856).
Saturnina, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 60 (1858).

Genus CRICULA, *Walker.*

Cricula, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1186 (1855).
Euphranor, *Herr. Schäffer, Lép. Exot. Spec. Nov. p.* 61 (1858).

915. *CRICULA TRIFENESTRATA, Helfer Sp.*

Saturnia trifenestrata, *Helfer, Journ. Asiatic Soc. Bengal,* VI. *p.* 45 (1837). *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *pl.* 17, *f.* 80, ♀.

Cricula trifenestrata, *Walker, List Lep. Het. Brit. Mus. pt.* V. *pp.* 1187, 1196.

Euphranor trifenestrata, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 61 (1858).

♂ Saturnia Zuleika, *Westwood, Cabinet Orient. Ent. p.* 25, *pl.* 11, *f.* 1 (1847).

Antheræa Zuleika, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1252.

? Phalæna-Attacus fenestrata, *Linnæus, Syst. Nat.* I. II. *p.* 811; *Mus. Lud. Ulr. p.* 372. *Clerck, Icon. pl.* 55, *f.* 1.

? Phalæna-Attacus perspicua, *Linnæus, S. N.* I. II. *p.* 811; *Mus. Lud. Ulr. p.* 373.

? var. ♀ Euphranor multifenestrata, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 551, *p.* 61.

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

e. ♂. N. India. From Capt. Harrington's Collection.

f. var. ♀. (? *Euphranor multifenestrata,* H. Schäffer.) Canara. Presented by S. N. Ward, Esq.

The larva, cocoon, and pupa of *C. trifenestrata* are figured on Plate XVIII., figs. 7, 7*a*, 7*b*, from Java. "Feeds on the *Teng-gulung* (*Protium javanum*), the *Kettos* (*Canarium commune*), the *Ingas*

(*Mangifera Ingas* ?). December and January. Abundant. Solitary in March."—(Horsfield, MS.)

Discovered in Assam by Capt. Jenkins, where it "lives on the *Soon* tree, but seems to be not much used."

"Eggs whitish-yellow; larva and pupa unknown [to Dr. Helfer]; cocoon yellow, in a network, transparent, so that the chrysalis in the inside is to be seen, of a remarkable silky lustre." — (Dr. Helfer, J. A. S. Beng. (1837), p. 45.)

Transformations also observed by Mrs. Hamilton, and figured among her original drawings, now in the possession of the Entomological Society of London.

This interesting species of silkworm moth has been lately found and reared in Moulmein by Capt. J. C. Haughton, who states that he "only observed it upon the Cashew-nut tree (*Anacardium orientale*), which, though exotic, has thoroughly taken root both at Tavoy and at Moulmein, and is now to be found in every native garden." — (Journal of the Agri-Horticultural Society of India, vol. X. pt. I. p. 101, 1858.)

Genus ANTHERÆA, *Hübner.*

ANTHERÆA, *Hübner, Verz. bek. Schmett. p.* 152 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1239.

PHALÆNA-ATTACUS, *pt. Linnæus.*

BOMBYX, *pt. Fabricius.*

916. *ANTHERÆA PAPHIA, Linnæus Sp.*

Phalæna-Attacus Paphia, *Linnæus, Syst. Nat.* I. II. *p.* 809 (1767); *Mus. Lud. Ulr. p.* 369. *Cramer, Pap. Exot.* II. *pp.* 78, 81, 82, *pl.* 146, *f. A.* ♀, *pl.* 147, *f. A. B.* ♀, *pl.* 148, *f. A.* ♂.

Antheræa Paphia, *Hübner, Verz. bek. Schmett. p.* 152.

Bombyx Paphia, *Fabricius, Syst. Ent. p.* 557; *Spec. Ins.* II. *p.* 168; *Mant. Ins.* II *p.* 108; *Ent. Syst.* III. I. *p.* 409. *Sykes, Trans. Asiat. Soc. Lond.* III. *p.* 541, *plate.*

Phalæna Paphia, *Roxburgh, Trans. Linn. Soc.* VII. *p.* 33 (1804).

Saturnia Paphia, *Helfer, Journ. As. Soc. Beng.* VI. *p.* 42 (1837).

Phalæna-Attacus Mylitta, *Drury, Ill. Exot. Ins.* II. *p.* 8, *pl.* 5, *f.* 1♀, *App. p.* (1773).

Bombyx Mylitta, *Fabricius, Syst. Ent. p.* 558; *Spec. Ins.* II. *p.* 163; *Mant. Ins.* II. *p.* 108; *Ent. Syst.* III. I. *p.* 411.

Antheræa Mylitta, *Hübner, Verz. bek. Schmett. p.* 152. *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1247.

Attacus Mylitta, *Blanchard, in Jacquemont's Voy. dans l'Inde, Zool. Ins. p.* 24, *pl.* III.

Saturnia Mylitta, *Westwood, ed. Drury, Ins.* II. *p.* 10, *pl.* 5, *f.* 1. *Royle, Reports on the Paris Universal Exhibition, pt.* III. *p.* 216. *Guérin-Méneville,* Rev. et Mag. Zool.* (1855), *p.* 297, *pl.* 6, *f.* 2.

Tesser; Folliculus *et* Eruca Bengalensis *vocatur* Tesser, *Rumphius, Herb. Amb.* III. *p.* 115 (1750).

Tussen Silkworm Moth, Hind., *Helfer.*

Bughy Silkworm Moth, of the Burbhoom-hills, *Roxburgh.*

Kolisurra Silkworm Moth of the Mahrattas, *Col. Sykes.*

Munga Silkworm Moth of the Meches, *B. H. Hodgson, Esq.*

Kosikuri Mooga, of the Assamese, *Hugon, J. A. S. Beng.* VI. *p.* 32 (1837).

a. b. ♂ ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

c. d. ♂ ♀. Bengal. Presented by Col. Buckley.

e. f. ♂ ♀. Dukhun. Presented by Col. Sykes.

g. h. ♂ ♀. Madras. From Capt. J. M. Jones's Collection.

i. ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Antheræa Paphia* are figured on Plate XIX., figs. 1, 1*a*, copied from the original drawings made by Lady Isabella Rose Gilbert.

The transformations of the Tussch moth are also figured by the late General Hardwicke (*see* his drawings, vol. 10999, pl. 223), and more roughly by Dr. Roxburgh, in Trans. Linn. Soc. VII. p. 48, pl. 2.

One of the earliest notices of this insect, or of a species very nearly

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* *Antheræa Pernyi*, Guérin-Méneville, Rev. et Mag. Zool. (1855), p. 297, pl. 6, fig. 1, is a species that I met with many here figured.

related to it, is given by the venerable Rumphius, in his "Herbarium Amboinense," vol. III. p. 113, pl. 75, who discovered the larva in Amboina feeding on the *Mangium caseolare rubrum* (*Rizophora caseolaris*, Linn.), a plant of the order of Terebintaceæ. The figures of the larva and cocoon on Rumphius's plate show its close affinity to the *Anth. Eryphia*. After describing the larva and pupa, he continues, "postquam tales folliculos per trium septimanarum spatium servaveram, tam ex devoluto quam ex integro papilio exit, qui ex pulcherrimis et maximis erat, quos unquam conspexi, qui ad superiorem corporis partem sese demordens aperit, simulque secum flavescentis serici floccum educit, atque hoc semper per noctem peragit. Ejus corpus est, uti reliquorum papilionum, coloris squallido flavi, binosque digiti articulos longum, ad caput vero bina gerit cornicula plumacea, coloris aurantii: Quatuor magnas habet alas, quarum binæ exteriores maximæ sunt digitum circiter longæ, coloris aurantii, sed stria transversalis purpurea per illas decurrit, atque quævis ala in ejus medio oculum quasi gerit fenestratum, qui circulo purpureo circumductus est et instar vitri pellucidus."

Dr. Roxburgh (the next author) states this to be the *Bughy* of the natives of the Burbhoom hills, where the silk which the same people call *Tussch* is manufactured. A native of Bengal, Bahar, Assam, &c. Feeds upon the leaves of *Rhamnus jujuba* (Byer of the Hindoos), and of *Terminalia alata glabra*, Roxb. (Asseen of the Hindoos).

They are found in such abundance over many parts of Bengal and the adjoining provinces, as to have afforded to the natives, from time immemorial, an abundant supply of a most durable, coarse, dark-coloured silk, commonly called Tussch silk, which is woven into a kind of cloth called Tussch-doot'hies, much worn by Brahmins and other sects of Hindoos.

Eggs white, which hatch in from two to four weeks. The larvæ acquire their full size, which is about four inches in length, and three in circumference, in about six weeks. When the larvæ approach their full size, they are too heavy to crawl in search of their food with the back up, as is usual with most caterpillars, but traverse the branch suspended by the feet. When the larvæ are ready to spin the cocoon, each of them connects, by means of the recent glutinous filament of which the cocoon is made, two or three leaves into an exterior envelope, which serves as a basis to spin the complete cocoon in; besides, the cocoon is suspended from a branch of the tree by a thick, strong consolidated cord. The cocoon is of a nearly exact oval shape, and exceedingly firm texture. The chrysalis remains dormant for about nine

months, viz. from October until July, the perfect insect always emerging during the night, and does not exist more than from six to twelve days when confined.

Michael Atkinson, Esq., says, "This species cannot be domesticated. I am informed that the natives cannot even retain any of it for seed. The hill people say that they go into the jungles, and under the Byer and Asseen trees they find the excrement of the insect; on which they examine the tree, and, on discovering the small worms, they cut off branches of the tree sufficient for their purpose, with the young brood upon them; these they carry to convenient situations near their houses, and distribute the branches on the Asseen tree in proportion to the size thereof; but they put none on the Byer tree. The Parieahs, or hill people, guard the insects night and day while in the worm state, to preserve them from crows, and other birds by day, and from bats by night."—(Dr. Roxburgh Trans. Linn. Soc. VII. p. 33, 1804.)

According to Col. Sykes, this is the "Kolisurra silkworm of the Deccan. It feeds indiscriminately on the Sagwan, or Teak tree (*Tectona grandis*), the Bor (*Zizyphus jujube*), the Asana (*Terminalia alata glabra*), and the mulberry, Tut (*Morus indica*). The cocoons are extensively used by matchlock-men, cut into thongs, as ligatures for binding the matchlock-barrel to the stock: the thongs are more durable than those of leather."

From the Journal of the Agricultural and Horticultural Society of India, VI. p. 167 (1848), *et seqq.*, we extract the following notes by Messrs. B. H. Hodgson and R. W. G. Frith. According to Mr. Hodgson, "this is the *Munga* silkworm moth of the Meches, and is found wild in the *Saul* forest. It feeds on the Saul tree (*Shorea robusta*); the fibre yielded is very strong, and must surely be that known to classic commerce, and used by the Romans for the manufacture of the awnings of their immense theatres." Mr. Frith says:—"As far as my acquaintance with this insect extends, I believe it to be found throughout the whole of this side of India; that is to say, from the north-western range of the Himalaya direct south as far as Midnapore, and also through the north-eastern range to Assam, and southwards to Chittagong. I have no doubt but that it extends further, but cannot state so from my own experience. Dr. Royle, in his volume on the productive resources of India, states that it was found by Col. Sykes in the Bombay and by Dr. Geddes in the Madras presidency. I have seen it from Mussooree, and have it in my own collection from Kussowlee, Darjeeling, Assam, Cherra Poonjee, Sylhet,

Chittagong, from Chota Nagpore, and from several of the districts of Bengal. In Bengal I have taken the larva at all seasons of the year, excepting during the cold weather, when the trees constituting its food are useless. It is most abundant, I am informed, in the Bhaugulpore district, where the cocoons, in their proper season, are collected by cartloads for the manufacture of the *Bhaugulpore* or *Tusseh silk*, as it is called, and now so well known. It is not on account of the great size of the larva that it is obliged to take to the under-side of the twigs to enable it to traverse them in search of food (as is [above] stated by Dr. Roxburgh), for it can pass along the twigs in any *position* when they are *strong* and *thick* enough for its powerfully-clenching feet to find sufficient to grip hold of. It is clear, when the larva approaches the ends of the thinner branches and twigs (which it frequently does, having taken it on some so slight that it has been in perfectly pendent position), it would be impossible for it to travel with ease to itself in such position as to keep itself *upwards;* it therefore prefers taking the *under*-side of the twig, and passes along it in a suspended position, with the aid of its powerful feet; for it takes some little trouble to make them release their hold when once firmly fixed.

"I have known the perfect insect make its appearance out of the cocoon in the rainy season in about twenty days. A great deal depends, however, upon the temperature and the state of the atmosphere, as to the number of days that are required ere the moth makes its exit from the pupa state. The food of the larva seems to be confined to the leaves of but a few trees: I found it only upon the Bair (*Zizyphus jujuba*), both wild and cultivated kinds, and on the Badaam, or country almond (*Terminalia Catappa*). Mr. Hugon (*see* Journ. Asiat. Soc. VI. p. 32) states that it feeds, in Assam, not only on the Moonga trees, but also on the former of those mentioned above, and on the Semal (*Bombax heptaphyllum*). Dr. Helfer describes it as being taken upon and from other trees, and these are transplanted on to the Assun (*Terminalia alata*), but that they feed most commonly in the wild state on the Bair and Semal trees. Mr. Hodgson, again, has discovered that its food is the Saul tree (*Shorea robusta*); since writing which, I have been informed by a friend that in the Midnapore district the larva feeds upon the Saul also.

"Dr. Helfer (J. A. S. Beng. VI. p. 43) states 'that, according to Michael Atkinson, of Jungypore, this species cannot be domesticated, because the moths take flight before the females are fecundated.'

Dr. Helfer's opinion does not bear out the truth of this remark; and I agree with him, as he further states in continuation, that, having kept them in a musquito-curtain to prevent their escape, they were readily impregnated by the males, and deposited thousands of eggs. The moths, no doubt, both male and female, will fly away, if not confined in any manner to prevent them, particularly the males, for the sole purpose of seeking the females. I am of opinion that this silkworm might be reared and domesticated with very little care and attention. A female, for instance, produced from the cocoon and retained captive, can, as above stated, be readily impregnated by the males, which are so eager for the intercourse, that I have at times taken as many as from ten to fifteen individuals in the course of a couple of hours—between the hours of two and four in the morning, —and that for three or four nights in succession, with the aid of the same decoy female. The moths, both male and female, live for about ten days, if they are not allowed to approach each other for the purpose of reproducing their species, and this without food of any kind, seeing that they are not provided by nature with a mouth.

"Mr. Hugon states that the natives consider there are two varieties of this species, the Bhugy and Jharroo. I do not think so. I believe them to be one and the same species. The larva sometimes, for instance, when feeding on the common Bair of the jungles—is of a very dark-green colour, precisely that of the leaf itself, and might by some be considered as a different species, when compared with one that has fed on the Badaam (*Terminalia Catappa*), which is of a much lighter and prettier green, with a degree of transparency at the same time, and a slight tinge of yellow pervading it. The fact of the perfect insect being devoid of any mouth, has led me to infer that the secretion, which it emits for the purpose of softening the substance of the very hard cocoon from which it has to make its escape, is voided from the abdomen; and when effected, it has to *turn itself round in the cocoon* to enable it to set to work with its two fore-feet, which are provided with extremely strong and curved claws, and thread by thread works for itself an opening through which, while yet moist, its escape from the cocoon is effected, and that, too, before its wings have in any way enlarged by expansion to impede its exit. It is my intention to endeavour to ascertain this point beyond any doubt, if possible."*

* Capt. Thomas Hutton, in Journal of the Agri-Horticultural Society of India for 1856, p. 166, says, "*I doubt this*, because I have fully ascertained that the species known as *Actias Selene*, which is furnished on the shoulder of each wing

Mr. Hodgson again says:—"With regard to the distribution of the species, I apprehend that Mr. Frith is mistaken in supposing it does or can occur in climates like that of Darjeeling; for I not only never heard of the species here, but have failed in an experiment to rear it, which was carefully conducted under favourable circumstances, from cocoons got in the Saul forest by Mechis in my service, who are habituated to rearing silkworms. Gentlemen who make collections in this quarter are apt to blend whatever they procure from the Tarai forest, and lower hills, and from the mountains above them; and I conjecture that Mr. Frith's specimens of *Antheræa Paphia*, said to come from Darjeeling and Cherra Poonjee, were really obtained in the low lands beneath those places. I notice this point because of the numerous and important mistakes relative to the geographic distribution of zoological and botanical species which have thus been propagated. For example, Mr. Ogilby was led in this manner to suppose an otine bird (*Eupodotis bengalensis*) an inhabitant of these vast and precipitous and heavily-wooded mountains, and to name the species *Hemalayensis*, though it be really as little capable of dwelling in such a habitat, as is, I apprehend, the *Anth. Paphia*, or, more generally, any species of silkworm whatever. Silkworms abound south and east, upon or near the level of the plains; but I doubt if they pass the limits of Bengal in a north-westerly direction, even upon the plains; and, so far as I know, the Cosi river is their limit in that direction; nor do I believe they are ever found tame or wild at elevations materially above the plain level in Bengal or in Hindostan. In the *Saul* forest they may pass up towards the north-west as far as that forest extends, or to Hurdwar. But the *Saul* forest is hardly elevated at all above the level of the adjacent plain; and Cherra at 4,000 and Darjeeling at 7,000 differ *toto cælo* in characteristic pro-

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with a hard brown spine for the purpose of dividing the threads, likewise discharges a moistening liquid; and although, as in *Saturnia* [i. e. *Antheræa*] it is said to have *no mouth*, yet it is, nevertheless, *from the mouth*, or the place where it should be, that the solvent is discharged. The mouth is an *imperfect* mouth only, and is not organized for the reception of nourishment, although sufficiently perfect, it would appear, to secrete the liquid with which the threads are moistened. When the agglutinizing matter is thus dissolved, the threads are easily separated by the wing-spines, and an opening afforded for the egress of the moth. I have this season watched this process in no fewer than two hundred specimens of *Antheræa Selene*, and can answer for there being no mistake about the matter, a drop of the clear colourless liquid often remaining upon the tuft of hair or down on the forehead between the eyes, and which tuft appears to be used as a brush for the application of the solvent to all the threads of the cocoon."

ductions, as in climate, from all places situated on the low open level of the Gangetic plains. The *Anth. Paphia* avoids the open plain, as well as the mountainous heights, and, as seems to me, is exclusively confined to primitive forests, on the level, or near it, of the plains. If, therefore, the species be found wild in Bhaugulpore, Sylhet, Chittagong, or even Chota Nagpore, it is, I apprehend, confined in all those districts to the uncultivated and forest tracts at the base of their respective hill-ranges. Further inquiry as to the food of the wild worm of the *Saul* forest confirms my prior information that this species feeds almost, if not quite, exclusively on the leaves of *Shorea robusta;* and, as that tree extends not westerly beyond Hurdwar, the habitat of Kussowlee appears to me dubious, unless there be some mistake about the species.

"The above remarks," continues Mr. Hodgson, "may seem tiresome; but those who are aware of the stress now laid on the geographic distribution of species, and of the numerous errors of fact that have crept into the subject, as relates to this quarter, from the source above adverted to, will probably deem otherwise. My attention was drawn to the subject of the distribution of silkworms in India, with reference to the notices which the classics have left us of the ancient trade of India with the West, in the Roman times particularly."

To the above Mr. Frith replies:—"Regarding the geographical distribution of the species, I am almost at a loss how to satisfy Mr. Hodgson as to the circumstance of its being found at Darjeeling, having received it from thence myself from a party collecting for me. Again, those from Cherra Poonjee were collected by persons on the spot, who are employed by me for the sole purpose of forming entomological collections."

Again Mr. Hodgson writes:—"The wide diffusion of silkworms throughout the continent of India in the plains seems clear, and is a very interesting circumstance with reference to what we find in the classics about the trade of India with Europe in the latter days of Rome, and thereafter. Mr. Taylor (Journal Asiatic Society of Bengal) supposed that the chief 'things in commerce' in those days were products of Assam only. But I had long before traced most of them as indigenous products of all India extra Gangem, from Suddiah to Hurdwar, leaving silk only as an apparent exception. It need be no longer: fine wild worms of various kinds being, it now appears, found north-west all the way to the *debouche* of the Ganges into the plains. So far, then, I agree with Mr. Frith. But I confess myself still quite

a sceptic as to the alleged fact of the silkworms tenanting these mountains at elevations like that of Darjeeling."

In answer to the above remarks by Messrs. Hodgson and Frith, we quote the following by Capt. Thomas Hutton:—"The Tusseh moth (*Saturnia Paphia*), which Mr. Frith says he has procured from Mussooree and Kussowlee, a statement doubted by Mr. Hodgson, who confines the insect to the plains and base of the hills, pointing out that Collectors are in the habit of jumbling species from various localities into the same box, and calling them a collection of Himalayan species.

"Mr. Frith afterwards appeals to my letter to Mr. Westwood, as showing, as he imagines, from the mention of *Sat. Paphia*, that I had procured it at Mussooree. This is rather a bold jump to a conclusion! In reply to this part of the discussion, I incline to the side of Mr. Hodgson, whose remarks regarding the mode adopted by Collectors of specimens in general, no matter whether of birds or insects, are most correct. The practice here at Mussooree is this:—A person wishing to make a collection, either takes a native Collector into service, or purchases the specimens singly from independent Collectors who hawk about insects for sale. These native gentry, whether hired or otherwise, not being over fond of hard work, invariably *go down from Mussooree into the Doon, at the foot of the mountains*, and having there filled their boxes, return to the hills to sell them.

"The Collector, in most cases disdaining to know the difference between a moth and a butterfly, stows them all away into his boxes. These collections are then sent off, or carried off, as illustrative of the entomology of Mussooree and Landour, to which the collection bears about as close an affinity as the fauna of Southern India does to that of the Northern Provinces, species common to both being intermingled with others that exclusively belong to the one locality or the other. Thus the greater portion of species in these collections is exclusively lowland.

"Now, among the lowlanders I am inclined to include the Tusseh moth! I have collected at Simla and its neighbourhood, as well as at Mussooree; but, during my long residence at the latter station, I have only *once* in fifteen years seen the Tusseh moth, and that one specimen was a female, captured *in the Dehra Doon, near Hurdwar*; besides that, I am not altogether certain that the species is identical with the true Bengal Tusseh. In fact, I doubt the occurrence of that species in the hills, whether at Mussooree or at Kussowlee.

"Thus far the statements of Mr. Hodgson are, I think, correct; but

when he proceeds to assert that the Saul tree (*Shorea robusta*) does not extend westward of Hurdwar, he falls into an error that any traveller may correct; since there are splendid forests of Saul throughout the Dehra Doon, and even away as far west as the Jumna, if not farther.

"The Tusseh moths to which I alluded in my letter to Mr. Westwood were all sent to me in cocoon from Bhagulpore by the late Captain Don. We have here at Mussooree, and also at Simla, a species of Saturnia feeding on the common Hill Oak (*Quercus incana*), and bearing a resemblance to the Tusseh moth, though much smaller, and quite distinct;—can this be Mr. Frith's Kussowlee species?

"Mr. Frith mentions having 'inspected a very fine collection made by a gentleman at Mussooree, in which are no less than eleven species of true *Bombycidæ*, viz. nine of the genus *Saturnia*, one of *Actias*, and one of *Saturnia Mylitta*, or the true Tusseh moth.' Now, if this collection belonged to a son of the late Col. Buckley,* I can easily clear up the mystery of the Tusseh moth coming from Mussooree, since it was *one of my Bhagulpore specimens* given in exchange for something else: and I may as well point out that the collection to which I allude contained species from various parts of India, I myself having contributed insects from Mirzapore, Neemuch, and even from Afghanistan, in exchanges; while there were also a few from China! Besides which, Mr. Buckley's object being to make a collection without noting or caring for locality, the greater number of his specimens came, as usual, from the Dehra Doon. This (if I am right in my conjecture about the collection alluded to by Mr. Frith) may serve to show with what degree of suspicion any collection, *not made by a naturalist*, should be regarded by scientific men both at home and abroad; since, by taking it for granted that the collection contained only the species proper to the locality in which it is stated to have been made, the closet naturalist may be led to form the most erroneous conclusion in regard to the distribution of species. Nor is this remark to be confined to insects only, since it will equally apply to ornithological collections; so that any modern Adam, who may undertake to form a system, founded rather *upon the length and breadth of an animal's tail*, than upon the habits and manners of the species in their native haunts, and who thunders forth his dogmas from his artificial paradise of musty skins, may, and doubtless often has, put forth a host of errors for the acceptance of other *nat uralists* as little conversant with living species as himself.

* The collection was presented to the East-India Company's Museum in 1849.

"My own limited experience, therefore, leads me to coincide in opinion with Mr. Hodgson, and I accordingly reject the Tussch moth from the catalogue of Mussooree and mountain species, not even granting it a place at Kussowlee. Of true mountaineers we have, as far as my knowledge extends, three species of Saturnia; two others are found only in the depths of the warmest valleys,—such as *S. Atlas?* and *S. Katinka* (Westw.); the former occurring likewise in the Doon along with the Tussch moth; thus making in all six species of *Saturnia*."

(In a foot-note, Capt. Hutton further remarks:—"In my enumeration of the species found here, I omitted one large *Saturnia*, which I once found upon a quince-tree in the Botanical Garden; the larva, when first seen, appeared to be a white cocoon on the back of a leaf, but a closer view showed me the caterpillar densely covered with long white hairs. I never procured a second specimen.")

"To these we may add one species of Actias which is, I believe, confined to the hills from 5,000 feet upwards to 7,000 feet, and perhaps higher; it occurs likewise apparently in Sylhet, as Major Jenkins long ago kindly sent me a drawing of what I take to be this species. And, lastly, we have one species of true Bombyx (*B. Huttoni*, Westw.) which occurs abundantly on the wild mulberry from the Doon, upwards, to at least 7,000 feet. Thus showing a list of known silk-spinners to the number of nine; viz. seven *Saturnia*, one *Actias*, and one *Bombyx*: more there doubtless may be, although as yet unknown to me; but I strongly suspect that some of those mentioned by Mr. Frith as coming from Mussooree and Kussowlee were, in reality, natives of other localities.

"Mr. Hodgson likewise notices the occurrence of what he and Mr. Frith pronounce to be the Arrindy moth (*S. Cynthia*); and I have it also from Mussooree, where the caterpillar feeds on the shrub Mussooree (*Coriaria nipalensis*), and from which this station derives its name. Dr. Roxburgh's figure of the caterpillar of *S. Cynthia* is, however, so thoroughly unlike those occurring here, that, notwithstanding the identity (if I may so speak) of the imago, I am unwilling to pronounce decisively as to the species until I have compared our larvæ with those of undoubted *S. Cynthia* from Bengal. Ours occurs from the foot of the hills up to 6,000 feet of elevation."

Lady Isabella Rose Gilbert figures the transformations of *Ach. Paphia*, and in her MS. Notes says, "Tussur moths are hatched twice in the year, in May and August, the larvæ go into the chrysalis state in September, remaining so till the May following; whilst the

that enter the chrysalis state in July, come out in three weeks. Many of the females lay eggs in eight or ten hours after quitting the chrysalis, others again do not till the following night, or longer. In ten days the young larvæ make their appearance, and feed on the Assun tree and the Sal Sakooa (*Shorea robusta*). In about three weeks from the time of their exclusion from the egg they attain their full size, and in eight or ten days more prepare for their transformation into the chrysalis. The caterpillar commences its operations by drawing a few leaves slightly together, as if to screen it from observation. It then spins a strong cord, composed of many threads, altogether about the thickness of a crow-quill, at the end of which it weaves the cocoon. The cocoon is so transparent for the first six-and-thirty hours, that the larva may be distinctly perceived at work in the interior; after that time the cocoon gradually acquires consistence by the continued industry of the caterpillar, and becomes quite opaque from the addition of a glutinous liquid, with which it moistens the whole. When that dries, the cocoon appears as if covered with white powder, and in the course of a couple of days becomes perfectly hard.

"The moth generally deposits its eggs within a few yards of the cocoon; these the villagers collect, and keep in their houses till the young caterpillars come forth, when they are placed on the Assun trees in the jungles, the proprietors remaining to protect them from the birds, and to bring home the cocoons when perfect. The people who rear these silkworms are of the Sontal and Bhouree castes, and practise many superstitious ceremonies while tending them in the jungles."

917. *ANTHERÆA FRITHI, Moore.*

Antheræa Frithi, *Moore, P. Z. S.* (1859), *p.* , *pl.* LXII. *fig.* 1.

a. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Antheræa Frithi, n. sp. — Male, yellowish-ferruginous, the disc suffused with patches of darker ferruginous, and the exterior margin and about the base greyish-ferruginous; *fore-wing* with the costal band grey, the submarginal dark line evenly undulated, and parallel with it and before the ocellus are two deeply-undulated lines, the inner spaces between which are suffused with yellow, a large prominent apical patch and space within the cell yellow: *hind-wing* with

the submarginal line deeply undulated, with two parallel deeply undulated inner lines, the spaces between which are suffused with yellow, the inner line extending round the ocellus, and joining the sub-basal line; ocelli small, similar to those in *Anth. Papăia*; antennæ yellowish; frontal band grey; body yellowish-ferruginous. Expanse 5½ in.

918. *ANTHERÆA HELFERI, Moore.*

Antheræa Helferi, *Moore, P. Z. S.* (1859), *p.* *pl.* LXI. *fig.* 2.

a. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Antheræa Helferi, n. sp.—Male, yellowish-ferruginous, with a vinaceous tinge basally; *fore-wing* with the grey costal band, three dark ferruginous pink-margined lines,—the first sub-basal, transverse, and curved; the second within and near the base of the cell, oblique; the third above and joining the ocellus; the ocellus without a vitreous spot, which is replaced by a short yellow-margined line; a double submarginal indistinct undulated line, its apical end with a blackish spot, an indistinct suffused inner line close to the ocellus, and a dark marginal line of lunulated streaks: *hind-wing* with a dark marginal lunulated line, two darker submarginal deeply-undulated lines, the inner line extending round the ocellus to the sub-basal line; the ocellus with the black outer line terminating at its upper end in an oval spot, without a central vitreous spot, which is replaced by a narrow yellow line; antennæ brown; frontal band grey; body yellowish-ferruginous. Expanse 6 in.

919. *ANTHERÆA ROYLEI, Moore.*

Antheræa Roylei, *Moore, P. Z. S.* (1859), *p.* *pl.* LXI. *fig.* 1.

a. b. ♂ ♀. N. India. Presented by Col. Buckley.

c. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Antheræa Roylei, n. sp.—Dull buff-colour; *fore-wing* with the costal band brownish-grey, the sub-basal lines and the oblique submarginal line indistinct, greyish; *hind-wing* with the submarginal line indistinct; ocellus of both fore and hind-wings ill-defined, buff-colour within, with a minute vitreous spot. Female with the wings somewhat brighter-

coloured exteriorly, the submarginal line of both wings more distinct; ocelli more distinct; frontal band brownish-grey; antennæ brownish; body buff-colour Expanse of male 5¾ in., female 6¼ in.

920. *ANTHERÆA ASSAMA, Helfer Sp.*

Saturnia assamensis, *Helfer, Journ. Asiatic Society of Bengal*, VI. *p.* 43 (1837).

Saturnia assama, *Westwood, Cabinet Orient. Ent. p.* 41, *pl.* 20, *f.* 2.

Antheræa assama, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1249.

Mooga or Moonga of the Assamese, *Hugon and Helfer.*

Moonga, *Royle, Report of Paris Exhib. pt.* III. *p.* 216.

a. Assam. Mr. Hugon's Drawing.

The larva and cocoon of *Anth. Assama* are figured on Plate XIX., figs. 2, 2*a*, copied from Mr. Hugon's original figure in vol. VI. of the Journal of the Asiatic Society of Bengal, published in 1837.

From Mr. Hugon's remarks on the silks and silkworms of Assam, in the work above cited, we extract the following:—"Although the *Mooga* moth can be reared in houses, it is fed and thrives best in the open air and on the trees. The trees which afford it food are known in Assam by the following names; viz.—1. Addakoory. 2. Champa (*Michelia sp. ?*). 3. Soom. 4. Kontoolod. 5. Digluttee (*Tetranthera triglottica*, Ham.). 6. Pattee Shoonda (*Laurus obtusifolia*, Roxb.). 7. Sonhalloo (*Tetranthera macrophylla*, Roxb.). There are generally five breeds of *Mooga* worms in the year. On being hatched, the worm appears composed of alternate black and yellow rings; as it increases in size, the former are distinguished as six black moles, in regular lines, on each of the twelve rings which form its body. The colours gradually alter as it progresses, that of the body becoming lighter, the moles sky-blue, then red, with a bright gold-coloured ring round each. When full grown, the worm is above four inches long; its colours are most brilliant and varied in shades; the body appears transparent, and is of a very bright yellow or dark-green colour, with a brown and a yellow streak at the sides; in the latter the breathing-holes are distinguished by a black speck; the moles are red, and have each four sharp prickles and a few black hairs; the head and claws are of a light brown, the holders green, and covered with short black hair; the last pair have a black ring on the outside. Cocoon fawn-colour."

921. *ANTHERÆA LARISSA, Westwood Sp.*

♂ Saturnia Larissa, *Westwood, Cabinet Orient. Ent. p.* 49, *pl.* 24, *f.* 1 (1847).

Antheræa Larissa, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1250.

a. ♀. Java. From Dr. Horsfield's Collection.

922. *ANTHERÆA SIMLA, Westwood Sp.*

Saturnia Simla, *Westwood, Cabinet Orient. Ent. p.* 41, *pl.* 20, *f.* 1 (1847).

Antheræa Simla, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1249.

a. b. ♂ ♀. N. India. Presented by Col. Buckley.

c. ♀. N. India. Presented by General Hearsey.

d. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus LOEPA, *Moore.*

Antheræa (group III.), *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1250.

923. *LOEPA KATINKA, Westwood Sp.*

Saturnia Katinka, *Westwood, Cabinet Orient. Ent. p.* 25, *pl.* 12, *f.* 2 (1847).

Antheræa Katinka, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1251.

a. b. c. d. e. f. ♂ ♀, and pupa. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Loepa Katinka* are figured on Plate XX., figs. 1, 1*a*, from Java. "Feeds on the *Galing* (*Cissus sp.*), the *Girang* (*Leea sp.*). December to February. Abundant." — (Horsfield, MS.)

Genus ACTIAS, *Leach.*

ACTIAS, *Leach, Zool. Misc.* II. *p.* 25 (1815). *Macleay.*
TROPÆA, *Hübner, Verz. bek. Schmett. p.* 152 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1259.
PLECTROPTERON, *Hutton, Trans. Ent. Soc. Lond.* V. *p.* 45 (1847).
PHALÆNA-ATTACUS, *pt. Linnæus.*
BOMBYX, *pt. Fabricius.*

924. *ACTIAS SELENE, Macleay.*

Actias Selene, *Macleay, Leach's Zool. Misc.* II. *p.* 26, *pl.* 70 (1815). *Hutton, P. Z. S.* (1856), *p.* 5.

Tropæa Selene, *Hübner, Verz. bek. Schmett. p.* 158. *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1262.

Plectropteron Selene, *Hutton, Trans. Ent. Soc.* V. *p.* 85.

Plectropteron Dianæ, *Hutton, Trans. Ent. Soc.* V. *p.* 45 (1847); *Ann. Nat. Hist.* XVII. *p.* 60.

Phalæna-Attacus Luna, *Cramer, Pap. Exot.* I. *pl.* 31, *f. A. B.* (*nec. Drury*).

a. b. c. ♂ ♀. N. India. Presented by Col. Buckley.
d. e. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva of *Actias Selene* is figured on Plate XIX., figs. 3, 3*a*,—fig. 3 the young larva (fourth stage) copied from the original drawing made by Lady Isabella Rose Gilbert; fig. 3*a* (adult larva) is copied from Capt. Hutton's figure in the Trans. Ent. Soc. London, vol. V. pl. V.

Capt. Thomas Hutton has communicated* the following interesting remarks respecting this moth:—"A specimen of this splendid moth was brought to me on the 13th April, 1842, by a boy, who had captured it in a deep and warmly-sheltered glen at Mussooree. The specimen was a female, and was found clinging to the branches of a tree, or rather shrub, very similar to the Tartarian honeysuckle; it was accompanied by a male (*in coitu*), which effected its escape. As the specimen was much injured by her rough captor, I suffered her to live and deposit her eggs, which she did on the evening of the same

* Trans. Ent. Soc. Lond. IV. p. 221; id. V. pp. 45, 85.

day, to the number of thirty-two, each being of the size of a large mustard-seed, and of a mottled brownish colour. During the whole of the succeeding day she remained perfectly stationary, clinging to the window-frame, but in the evening deposited eighty-four eggs, and on the following evenings she again deposited as follows:—on the 15th, thirty-eight eggs; on the 16th, twenty-one eggs; on the 17th, sixteen eggs; on the 18th, twenty-one eggs; on the 19th, fourteen eggs; on the 20th, fourteen eggs; and on the 21st, seven eggs—amounting in all to 246 eggs,—and she then died. On the 28th April I received a male and female from the same place, and in the evening the female deposited eighty-nine eggs, and continued each night to increase the number until she had deposited 300 eggs, when she died.

"On the 30th April, or eighteen days from the time of deposition, the first batch of eggs began to hatch. The newly-born larva is about three lines in length, hairy, and of a pale rufous-red, with a single black band across the middle of the body, and a small black transverse mark on the anterior segment; along the back are two rows of small tubercles, and another along each side, from each of which spring a few short hairs, the base of which forms a small black dot; there is also an anal tubercle, larger than the others, and placed between the two last tubercles of the dorsal rows; the head is black.

"I was now exceedingly puzzled to find out the proper food, and, having unsuccessfully tried several kinds, at last gave them the leaves of our common hill oak (an Ilex), of which they ate sparingly, and without appetite. This was evidently not the proper food; and, although they continued to eat it, they did not thrive, but died in such numbers that I had at last only five larvæ left out of 546; and even these I was in daily expectation of losing, when, by a lucky chance, on the 30th of June, I discovered a single larva in the forest feeding on a tree known to the natives as the *Munsooree*.*

"Branches of this tree were now substituted for the oak, and from thenceforward the larvæ ate greedily, and increased rapidly in size. The first moult commenced when six days old, and this occupied three days, so that at the end of nine days the larva appeared in its second stage. The black transverse band upon the body had disappeared, but the head still remained of that colour, and the rest of the body was hairy and rufous, the tubercles being black on the summit, and more prominent; pro-legs brown.

Cynometra ramiflora.

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"The period between each change was about ten days in some specimens, but varied in others between that and shorter periods, probably depending in a great measure upon the quantity of nourishment obtained from the branches with which they were daily supplied.

"In the third stage, the caterpillar appeared of a bright rufous colour, the black dots or tubercles being larger and more prominent; but there were no black bands.

"In the *fourth* stage the change was still more remarkable, for the caterpillar now appeared of a beautiful apple-green, each tubercle headed with bright orange, except the *four* which spring from the second and third segments, which are ringed with black, and crowned with pale yellow; and the *anal* and *two posterior* tubercles, which are green throughout. From each tubercle springs a small tuft of hair, the centre one of each being longer than the others; the head and pro-legs brown; along each side is a line which is red above and yellow below, and the spiracles are red; there is a line of very small yellow dots along each side between the rows of tubercles.

"In the *fifth* stage the colours are the same, as they are also in the sixth and seventh stages; but the caterpillar increases rapidly in size, and is most beautiful and delicate in appearance, with a semi-transparency of hue which makes it look something like waxwork.

"One of these commenced spinning its cocoon on the 17th of July, being then about forty-six or forty-seven days old, and the remainder after the interval of a day or two; that is, on the 19th, 20th, and 25th July. The cocoon is formed of coarse brown silken threads, closely interwoven, and of an ovate form; it is inclosed among the leaves of the tree, which are, in fact, glued closely round it. It is hard, and not furnished interiorly with a soft silken bed, the chrysalis lying within a hard and hollow chamber.

"The chrysalis remained thus until the 14th August, when the one which had turned on the 17th July produced a perfect female, after a period of twenty-nine days. Another, which had turned on the 19th July, came forth a male on the 16th August, showing the time to be pretty uniform. A large caterpillar, however, which I found in the forest on the 16th July, turned to a chrysalis on the 24th of that month; but, instead of coming forth in the autumn, it remained in the chrysalis state throughout the winter—as did some others,—coming out in the following summer; namely, on the 11th, 14th, and 18th of June.

"The caterpillar feeds upon several trees common on these hills. The most common food appears to be the Munsooree, a shrub which

is so common as to have given rise, I believe, to the name of this settlement; namely, 'Munsoory,' or, more commonly among Europeans, 'Mussooree.' I do not know the botanical name of this plant."*—(Trans. Ent. Soc. IV. p. 221.)

"I have again reared specimens of *A. Selene*, and observed attentively the method by which it *cuts* its way through the cocoon, by means of the instrument which I have named 'the wing-spur,' or 'spine.'

"The point of this is thrust through the cocoon, and the cutting edge drawn across the fibres, until severed sufficiently to enable the moth to come forth."—(Trans. Ent. Soc. V. p. 85.)

"Before proceeding to separate the threads of the cocoon by means of the wing-spines, I have ascertained that the moth ejects from *the mouth* a few drops of a clear, colourless fluid, with which the gum is dissolved; and it appears to use the tuft of down on the front, between the eyes, as a brush for the application of the solvent."—(P. Z. S. (1856), p. 5.)

Capt. Hutton since remarks (Journal of the Agri-Horticultural Society of India, IX. pp. 167–9, 1856): "I have this season watched the process of the escape of this moth (*A. Selene*) from the cocoon in no fewer than two hundred specimens, and can answer for there being no mistake in the matter, a drop of the clear, colourless liquid often remaining upon the tuft of hair, or down, on the forehead between the eyes, and which tuft appears to be used as a brush for the application of the solvent to the threads of the cocoon.

"I have this year (1855) reared a number of the caterpillars for the purpose of ascertaining the value of the silk, but am sorry to say have failed in my attempts to unwind the silk from the cocoons. With some difficulty I managed to procure a supply of eggs from the moths which came forth in October, and had intended sending them to Europe, when, to my regret and surprise, they began to hatch on the 4th of November, and are still coming forth daily (10th). They are at present thriving on the shrub *Coriaria nipalensis*, growing in the open air; but whether they will be able to spin up again before the frosts set in, remains yet to be seen. These caterpillars feed naturally on *Coriaria nipalensis*, *Andromeda ovalifolia*, the walnut, and I think also upon *Carpinus bimana*. The first-named shrub would probably grow well and rapidly in some parts of Europe, and so furnish nourishment both for the larvæ of *Act. Selene*, if found

* *Coriaria nipalensis*

worth introducing, and also of *S. Cynthia*, which seems to be acclimated in Italy.

"This species, I believe, is confined to the hills from 5,000 feet upward to 7,000 feet, and perhaps higher; it occurs also in Sylhet, as Major Jenkins kindly sent me a drawing of what I take to be this species."

The transformations of *Actias Selene* are also figured in vol. III. pl. 84, of the original drawings made by Lady Isabella Rose Gilbert, the larva being represented in three stages. The cocoon is attached to and nearly covered by a couple of leaves.

Genus SATURNIA, *Schrank.*

SATURNIA, *Schrank, Faun. Boica*, II. *pt.* II. *p.* 149 (1802). *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1268.
PAVONIA, *Hübner, Verz. bek. Schmett. p.* 157 (1816).
PHALÆNA-ATTACUS, *pt. Linnæus.*
BOMBYX, *pt. Fabricius.*

925. *SATURNIA PYRETORUM, Boisduval.*

Saturnia Pyretorum, *Boisduval, MS. Westwood, Cabinet Orient. Ent. p.* 49, *pl.* 24, *f.* 2 (1847). *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1273.

a. ♂. China. Presented by Colonel Buckley.

926. *SATURNIA GROTEI, Moore.*

Saturnia Grotei, *Moore, P. Z. S.* (1859), *p.* , *pl.* LXII. *fig.* 2.

a. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Saturnia Grotei, n. sp.—*Fore-wing* pale buff-colour, brownish along the costa and about the apex, and thickly irrorated with black and brown scales to beyond the middle; a large black-margined marrone-coloured ocellus, containing a narrow transverse white lunule; a submarginal black band, bounded inwardly with a double zigzag pale-margined black line, which extends to near the apex, where the space contains a marrone-coloured patch and a black spot, both of which are irrorated with white scales; exterior margin dull buff, with a row of narrow oval marrone-brown spots: *hind-wing* brownish at the base and along abdominal margin; the disc pink, containing a similar but smaller ocellus as the fore-wing; a submarginal black band, bounded

inwardly by two undulated black lines, the inner line extending round the ocellus; exterior margin dull buff, with a row of narrow oval marrone-brown spots; thorax crossed by a pale buff line. Expanse nearly 3 in.

Genus ATTACUS, *Linnæus.*

Phalæna-Attacus, *Linnæus, S. N.* I. II. *p.* 808 (1767).
Attacus, *Hübner, Verz. bek. Schmett. p.* 155. *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1200.
Hyolophora, *pt. Duncan, Nat. Libr.* VII.
Attacus, *pt. Latreille.*

927. *ATTACUS ATLAS, Linnæus.*

Phalæna-Attacus Atlas, *Linnæus, Syst. Nat.* I. II. *p.* 808 (1767); *Mus. Ld. Ulr. p.* 366. *Cramer, Pap. Exot.* IV. *pp.* 180, 183, *pl.* 381, *f. C.; pl.* 382, *f. A.*

Attacus Atlas, *Hübner, Verz. bek. Schmett. p.* 156. *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1218.

Bombyx Atlas, *Fabricius, Syst. Ent. p* 566; *Spec. Ins.* II. *p.* 167; *Mant. Ins.* II. *p.* 108; *Ent. Syst.* III. I. *p.* 407; *Olivier, Enc. Méth. Ins.* V. *p.* 21, *pl.* 69, *f.* 1.

var. Phalæna-Attacus Atlas, *Cramer, Pap. Exot.* I. *p.* 13, *pl.* 9, *f. A.*

var. Saturnia Silhetica, *Helfer, Journ. Asiat. Soc. Bengal,* VI. *p.* 41 (1837).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.
e. f. ♂ ♀. Madras. Presented by S. N. Ward, Esq.
g. h. ♂ ♀. Silhet. Presented by Col. Buckley.
i. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva and cocoon of *Attacus Atlas* are figured on Plate XX., figs. 2, 2*a*, from Java. "Feeds on the *Melokka* (*Phyllanthus Emblica*), *Kupu-gaja*, &c. December to January. Rather common."—(Horsfield, MS.)

From the MS. Notes made by Lady Isabella Rose Gilbert in 1825, we extract the following:- "A specimen (female) of this magnificent moth was caught on the 4th September. On the following morning she laid several pink-and-white eggs. On the 15th the young cater-

pillars were hatched. Being uncertain what plant they fed on, I placed them on slips of different trees; viz., apple, peach, plum, &c. The young caterpillars were black, with numerous white spines; as they grew larger, and changed their skins, the spines became covered with a kind of white powder, giving them a very delicate appearance; added to which, the ground-colour of the body, since the first few days after they were hatched, had become a light green. They always ate their skins after casting them. Day and night they devoured the leaves, and those on the apple-branch grew to an enormous size; and, on the 12th October, one of these began to prepare for its transformation by bending back a large leaf, and inclosing itself in a web, which it completed on the 13th. During the three preceding days it had considerably diminished in size: this I have observed to be the case with many larvæ prior to their change. On the 22nd June following the moth came out."

928. *ATTACUS EDWARDSI, White.*

Attacus Edwardsii, *White, P. Z. S.* (1859), *p.* , *pl.*

a. ♀. Darjeeling. From Messrs. Schlagintweit's Collection.

This species is distinguished from *Att. Atlas* "by its intensely dark colour, especially on that band bounded by angled and curved, white, defined lines, in which the fenestræ occur. This band is of a dark blackish-brown, passing into a rich chestnut-brown above the fenestræ of the upper wings and on their posterior margin; the inner margin of the lower wings is of this red-brown also; the fenestræ are not bounded by a margin of black scales as in *Att. Atlas*, but by ochreous-yellow squamulation; the part of the fenestræ towards the base of the wings, which in *Att. Atlas* is curved convexly, is in *Att. Edwardsii* straight; the fenestra is longer, the white lines on the wings, breaking up the brown so beautifully, are wider, and that on the lower wing is less scalloped than in *Att. Atlas;* the margin of the lower wing on the outside has two much-waved lines, the inner is yellow, with thirteen or fourteen undulations, continued on the upper wing till it leaves off where the wing is dilated into the lobe, which gives the wing its hooked-like character; the lower line is brownish-black, and is straight, except in six places, where the black runs up the nerves triangularly to a point, and meets two of the yellow lobes, which are conjugate."

929. *ATTACUS CYNTHIA, Drury Sp.*

Phalæna-Attacus Cynthia, *Drury, Exot. Ins.* II. *pl.* 6, *f.* 2; *App. p.* ii. (1773). *Cramer, Pap. Exot.* I. *p.* 62, *pl.* 89, *f. A.*

Attacus Cynthia, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1220.

Phalæna Cynthia, *Roxburgh, Trans. Linn. Soc.* VII. *p.* 42, *pl.* 3. *Buchanan, Descr. Dinajpur, p.* 214. *Helfer, Journ. Asiat. Soc. Beng.* VI. *p.* 45 (1837).

Bombyx Cynthia, *Olivier, Enc. Méth. Ins.* V. *p.* 30.

Samia Cynthia, *Hübner, Verz. bek. Schmett. p.* 156.

Saturnia Cynthia, *Westwood, ed. Drury's Ins.* II. *p.* 12, *pl.* 6, *f.* 2.

Saturnia Arrundi, *Royle, Reports on the Paris Universal Exhibition, pt.* III. *p.* 216 (1856).

The Arrindy or Arrundy Silkworm Moth, *Roxburgh. Helfer.*

Eria of Assam, *Hugon, J. A. S. Beng.* VI. *p.* 21.

Eri or Eria of Assam, *Royle.*

a. b. ♂ ♀. N. India. Presented by Col. Buckley.

c. d. ♂ ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

e. f. ♂ ♀. Ladakh. Presented by Capt. Strachey.

g. ♀. Hong-Kong. Presented by W. H. Lloyd, Esq.

h. i. j. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of the Eria are figured on Plate XX., figs. 3, 3*a*, copied from Dr. Roxburgh's figure in Trans. Linn. Soc. VII. pl. 3.

930. *ATTACUS RICINI, Boisduval Sp.*

Saturnia Ricini, *Boisduval, Ann. Soc. Entom. France, 3rd ser.* II. *p.* 755 (1854).

Saturnia lunula, *MS. Cabinet British Museum.*

Attacus lunula, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1221 (1855).

a. ♂. (*Att. lunula,* Walk.) N. India. From the Asiatic Society of Bengal.

b. ♀. (Ditto.) Assam. Presented by Col. Buckley.

c. d. (*Sat. Ricini,* Boisd.) From M. Becker's Collection.

"The insect," says Dr. Roxburgh, "known to the Hindoos by the name of *Arindy* in some parts, in others *Arundi*, appears to be peculiar to the interior parts of Bengal: and, so far as I can learn, to two districts only, viz., Dinagpore and Rungpore, where the natives breed and rear it in a domestic state, as they do the common silkworm. The food of the caterpillar consists entirely of the leaves of the common *Ricinus*, or *Palma Christi*, which the natives of these districts call *Arrindy* (hence the name of the insect), and is abundantly reared over every part of India, on account of the oil obtained from the seed.

"Eggs pure white, which hatch in from ten to fifteen days. The larvæ arrive at their full size, which is from two and a half to three inches, in about one month, during which they cast their skin three or four times. They are very voracious, devouring daily many times their own weight of food. The cocoon, or covering thereof, is white or yellowish, of a very soft, delicate texture, in general about two inches long and three in circumference, pointed at each end; in it the animal remains dormant from ten to twenty days, according to the temperature. The perfect insect lives from four to eight days, remaining perfectly contented in its chamber, seldom attempting to fly away.

"Mr. Atkinson remarks that 'they are reared in a domestic state, and entirely feed on the leaves of the Palma Christi plant. Their cocoons are remarkably soft and white, or yellowish; the filament so exceedingly delicate, as to render it impracticable to wind off the silk: it is therefore spun like cotton. The yarn thus manufactured is wove into a coarse kind of white cloth, of a seemingly loose texture, but of incredible durability, the life of one person being seldom sufficient to wear out a garment made of it.'"—(Trans. Linn. Soc. VII. p. 42, 1804.)

The caterpillar of the Eria, according to Mr. Hugon (*see* J. A. S. Beng. VI. pp. 23, 24), "in a domesticated state at Assam, is, when young, about a quarter of an inch in length, and nearly black; as it increases in size, it becomes of an orange-colour, with six black spots on each of the segments; the head and legs are black; after the

second moulting, they change to an orange-colour, that of the body gradually becomes lighter, in some approaching to white, in others to green, and the black spots gradually become the colour of the body; after the fourth and last moulting, the colour is a dirty white, or a dark green: the white caterpillars invariably spin red silk, the green ones white. On attaining its full size, the worm is about three and a half inches long; its colours are uniform and dull; the breathing-holes are marked by a black mark; the moles have become the colour of the body, and have increased to long fleshy points, without the sharp prickles the Moonga worm has; the body has a few short hairs, hardly perceptible.

"In four days the cocoon is completed. The hill tribes settled in the plains are very fond of eating the chrysalis."

"The Arrindy Arria, or Eria silkworm is reared over a great part of Hindostan, but more especially in the districts of Dinajpur and Rangpur, in houses in a domesticated state, and feeds chiefly on the leaves of *Ricinus communis*. The silk of this species has hitherto never been wound off, but people were obliged to spin it like cotton.

"It is so productive as to give sometimes twelve broods of spun silk in the course of the year. The worm grows rapidly, and offers no difficulty whatever for an extensive speculation."—(Dr. Helfer, Journ. As. Soc. Beng. (1837), p. 45.)

In the Journal of the Agricultural and Horticultural Society of India, vol. II. part II. p. 61, is an account of the successful experiment of winding off the silk from the cocoon of the Eria worm.

Some further accounts also appear in the Transactions of the Entomological Society of London for December, 1854, and reprinted in the Agricultural and Horticultural Society's Journal of India, vol. IX. pt. II. p. 29.

931. *ATTACUS GUERINI, Moore.*

Attacus Guerini, *Moore, P. Z. S.* (1859), *p.* , *pl.* LXI. *fig.* 3.

a. b. c. Bengal. From the Asiatic Society of Bengal.

Attacus Guerini, n. sp.? — Distinguished from *A. Cynthia* and *A. Ricini* by its smaller size and darker colour, the *fore-wings* having the two transverse white lines joined together about the middle, the junction forming a somewhat rounded spot, and by its being *without* the lunate vitreous streak, which is replaced by a small yellowish

spot, which in some specimens is obsolete; *hind-wing* with a small rounded, yellowish, slightly-vitreous spot. Expanse from 3½ in. to 3¾ in.

Genus BRAHMÆA, *Walker.*

BRAHMÆA, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1315 (1855).
BOMBYX, *pt. Fabricius.*

932. *BRAHMÆA CERTHIA, Fabricius Sp.*

Bombyx Certhia, *Fabricius, Ent. Syst.* III. I. *p.* 412 (1797). *Petiver, Gazoph. pl.* 18, *f.* 3.

Brahmæa Certhia, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1316.

Bombyx Wallichii, *J. E. Gray, Zool. Misc. p.* 39 (1832).

Bombyx spectabilis, *Hope, Trans. Linn. Soc.* XVIII. *p.* 113, *pl.* 31, *f.* 3 (1841).

a. ♂. Nepal. Presented by the Trustees of the British Museum.

Stirps VI.—Larvæ LIMACIFORMES.

Larva limaciform, oblong, convex above, provided with fleshy protuberances of various size, arranged along the back, rarely more lengthened anteriorly and posteriorly, and crested with numerous short rigid hairs. In some cases these protuberances are limited to the sides, in others the surface is entirely naked. Underneath plain, with rudimentary legs.

Metamorphosis :—Cocoon oval or round, of a firm texture throughout, sometimes with a slight silker outer covering, the imago escaping through a well-defined circular opening representing an operculum. Generally attached to leaves.

The perfect insect has somewhat short and broad wings; flies by day. Antennæ simple, or nearly so, in both sexes, or bipectinated to about one-third the length, or moderately bipectinated throughout in the male, and simple in the female; proboscis very short, invisible or obsolete; body stout.

Bombyces (*Larva* V. Limaciformes), *Denis et Schiffermüller, Wien. Verz. p.* 65 (1776).

Bombycidæ (*Stirps* II. *pt.*), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 24, 27 (1828).

Arctiidæ, *pt. Stephens, Ill. Brit. Ins.* II. *p.* 54 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 49 (1850). *Westwood, Intr.* II. *p.* 384 (1840).

Cochliopodes, *Boisduval, Ind. Méth. p.* 81 (1840).

Limacodites, *Blanchard, Hist. Nat. des Ins.* II. *p.* 364 (1845)

Limacodidæ, *Duponchel, Catal. Méth. Eur. Lép. p.* 84 (1846).

Limacodidi, *Stephens, Catal. Brit. Lep. Brit. Mus. p.* 57 (1850).

Cochliopodidæ, *Stainton, Manual Brit. Lep. pp.* 108, 168 (1856).

Platypterycides, *pt. Blanchard.*

Notodontidæ, *pt. Walker.*

Cossina, *pt. Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 58 (1858).

Genus SETORA, *Walker.*

SETORA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1069 (1855).

933. *SETORA NITENS, Walker.*

♀ Setora nitens, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1069 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Setora nitens* are figured on Plate XXI., figs. 1, 1*a*, 1*b*, from Java.

Genus SCOPELODES, *Westwood.*

SCOPELODES, *Westwood, Duncan's Nat. Libr.* XXXVII. *p.* 222 (1841). *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1104.

DALCERA, *pt. Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 509 (1856).

934. *SCOPELODES PALPALIS, Walker.*

Scopelodes palpalis, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1105 (1855).

Dalcera palpigera, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 509 (1856).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Scop. palpalis* are figured on Plate XXI., figs. 2, 2*a*, from Java. "Feeds on the *Jambu Bol* (*Eugenia sp.* ——). December to April. Abundant."—(Horsfield, MS.)

Genus MIRESSA, *Walker.*

MIRESSA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1123 (1855).
NYSSIA, *pt. Herr. Schäffer.*

935. *MIRESSA ALBIPUNCTA, Herr. Schäffer Sp.*

Nyssia albipuncta, *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 179 (1854).

Miressa albipuncta, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1123.

a. N. India. Presented by General Hearsey.

b. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

936. *MIRESSA INORNATA, Walker.*

Miressa inornata, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1125 (1855).

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

937. *MIRESSA NIVAHA, Moore.*

Miressa Nivaha, n. sp.—Dark ferruginous-brown; *fore-wing* with a narrow discal and marginal transverse silvery line; *hind-wing* pale ferruginous; sides of abdomen pale ferruginous. Expanse 1¼ in.

a. b. ♂ ♀. Canara. Presented by S. N. Ward, Esq.

Genus CHILENA, *Walker.*

Chilena, *Walker, List Lep. Het Brit. Mus. pt.* V. *p.* 1070 (1855).

938. *CHILENA SIMILIS, Walker.*

Chilena similis, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1071 (1855).

a. b. ♂ ♀. N. India. Presented by General Hearsey.

Genus PARASA, *Moore.*

Neæra,* *Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 176 (1854). *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1138 (1855).

939. *PARASA LEPIDA, Cramer Sp.*

Phalæna-Noctua lepida, *Cramer, Pap. Exot.* II. *p.* 50, *pl.* 130, *f. E.* (1779).

Limacodes graciosa, *Westwood, Cab. Orient. Ent. p.* 50, *pl.* 24, *f.* 4 (1847).

Neæra graciosa, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1139 (1855).

a. b. c. ♂ ♀, and pupa. Bombay. Presented by Ezra T. Downes, Esq.

d. ♀. Bengal. Presented by Col. Buckley.

The larvæ, cocoon, and details of larva of *Parasa lepida* are figured on Plate XXI., figs. 3, 3*a*, 3*b*, 3*c*, 3*d*; figs. 3 and 3*b* copied from the

* Occupied in 1830 for a genus of *Diptera*.

original drawings of A. Grote, Esq.; and figs. 3*a*, 3*c*, 3*d* from those of Capt. Mortimer Slater.

Mr. Grote's larvæ were "found on *Eugenia* and *Mangifera*, and went into the pupa state in October, 1855, the imago emerging in June, 1856."

Capt. Slater informs us, in his MS., "Larva found at Dinapore, October 2, 1848. Feeds on the Pipul (*Ficus religiosa*) and almond-tree. The mask which conceals the head (*vide* plate, figs. 3*c*, 3*d*) when at rest is curious. It is prehensile, and clasps the edge of the leaf while the head underneath is eating its way along. Instead of pro-legs, it has eight pairs of soft, flexible protuberances, which by a peristaltic kind of motion are made to serve as pro-legs, and by means of them the animal clings particularly strong against the surface even of glass."

Dr. Templeton (in a letter written to Sir James E. Tennant, November 19, 1857) says that "the caterpillar (of *P. lepida*) stings with such horrible pain, that I sat in the room almost sick with it, and unable to keep the tears from running down my cheeks for more than two hours, applying ammonia all the time. The caterpillar feeds on the Jasmine-flowering Carissa, in gardens."

940. *PARASA MEDIA, Walker Sp.*

Neæra media, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1140 (1855).

a. b. c. d. e. f. ♂ ♀, and pupa. Java. From Dr. Horsfield's Collection.

The larva, pupa, and cocoon of *Parasa media* are figured on Plate XXI., figs. 4, 4*a*. from Java. "Feeds on the *Juet Jambu* (*Eugenia sp.* ——). February, March, April. Common." — (Horsfield, MS.)

941. *PARASA DARMA, Moore* (*Plate* XI*a*, *fig.* 7).

Parasa Darma, n. sp.—Dark ferruginous-brown; *fore-wing* with a large, broad, curved, longitudinal grass-green patch, which is narrowly bordered with white; space along the exterior margin with a silvery tinge; a marginal line narrow, black: *hind-wing* pale yellow at the base, with a broad marginal brown band; head and thorax with a green lateral spot; abdomen pale brown. Expanse 1¼ in.

a. ♀. Java. From Dr. Horsfield's Collection.

912. *PARASA BICOLOR, Walker Sp.*

Neæra bicolor, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1142 (1855).

a. and pupa. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Parasa bicolor* are figured on Plate XXI., figs. 5, 5*a*, from Java. "Feeds on the *Pring* (*Bambusa Arundo*). March and April."—(Horsfield, MS.)

913. *PARASA BISURA, Moore* (*Plate* XI*a. fig.* 11).

Parasa Bisura, n. sp.—Dark brown; *fore-wing* with a transverse subapical darker line, with pale borders; some black zigzag discal marks. Expanse $\frac{7}{8}$ in.

a. b. c. d. ♂ ♀, and pupa. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Parasa Bisura* are figured on Plate XXI., figs. 6, 6*a*, from Java. "Feeds on the *Jarak* (*Ricinus sp.* — —). April."—(Horsfield, MS.)

914. *PARASA UNICOLOR, Moore.*

Parasa unicolor, n. sp.—Colour of a uniform pale brownish-buff, with a narrow paler exterior margin. Expanse $1\frac{1}{2}$ in.

a. N. India. Mr. Grote's Drawing.

The larva and cocoon of *Parasa unicolor* are figured on Plate XXI., figs. 7, 7*a*, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on *Ochna squarrosa.*"—(Grote, MS.)

915. *PARASA NARARI*[1], *Moore.*

Parasa Nararia, n. sp.—Female, colour light brown; *fore-wing* with a transverse slightly-curved narrow dark line before the exterior margin. Expanse $\frac{7}{8}$ in.

a. ♀. N. India. Mr. Grote's Drawing.

[1] PARASA ISABELLA, *Moore*

Fore-wing green, with a large exterior basal spot and narrow curved band and exterior margin, ochreous-yellow, *hind-wing* and abdomen pale ochreous; thorax green.

Hab. Penang. Collected by Lady Isabella Cator.

The larva and cocoon of *Parasa Nararia* are figured on Plate XXI., figs. 8, 8*a*, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on a species of *Crescentia*, which, however, is not an indigenous plant."—(Grote, MS. Notes.)

916. *PARASA TRIMA, Moore* (*Pl.* XI*a*, *fig.* 13, ♂ ; 13*a*, ♀).

Parasa Trima, n. sp.—Ferruginous-brown. Male ; *fore-wing* with five transverse narrow black lines with pale margins ; a small spot at the apex and another at the posterior angle, ferruginous-white. Female ; *fore-wing* with the space between the middle transverse lines broadly paler ; antennæ of male bipectinated throughout, in the female slightly serrate. Expanse of male $\frac{3}{4}$ in., of female $\frac{7}{8}$ in.

a. b. c. d. e. f. ♂ ♀. and pupa. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Parasa Trima* are figured on Plate XXI., figs. 9, 9*a*, from Java. "Feeds on a species of *Eugenia*, bearing the native name of *Jambu Ayer*. March, April, and May. Not common." —(Horsfield, MS.)

917. *PARASA BILINEA, Walker Sp.* (*Plate* XI*a*, *fig.* 8).

Neara bilinea, *Walker*, *List Lep. Het. Brit. Mus. pt.* V. *p.* 1142 (1855).

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

c. ♀. N. India. Presented by General Hearsey.

The larva and cocoon of *P. bilinea* are figured on Plate XXI., figs. 10, 10*a*, from Java. "Feeds on the *Malati Kosta* (*Cadamba jasminiflora*). December. Single. Scarce."—(Horsfield, MS.)

918. *PARASA DOENIA, Moore* (*Plate* XI*a*, *fig.* 10).

Parasa Doenia, n. sp.—Pale buff-brown ; *fore-wing* with an oblique anchor-shaped ferruginous mark, extending from middle of posterior margin towards the apex, with a black discal spot on each side ; also a black apical dot ; thorax with a ferruginous spot on the hind part ; abdomen with ferruginous dorsal tufts. Expanse $\frac{7}{10}$ in.

a. ♂. Java. From Dr. Horsfield's Collection.

949. *PARASA BANDURA, Moore* (*Plate* XI*a*, *fig.* 9).

Parasa Bandura, n. sp.—Male, pale buff, *fore-wing* having the entire disc from near the base, brown; the costal margin and ciliæ pale buff. Expanse 1¼ in.

a. ♂. Java. From Dr. Horsfield's Collection.

950. *PARASA LOESA, Moore* (*Plate* XI*a*, *fig.* 12, ♀).

Parasa Loesa, n. sp.—Male, pale buff-brown; *fore-wing* with an oblique transverse narrow darker line, and a dark discal dot. Expanse 1⅛ in.

a. b. c. ♂ ♀, and pupa. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *P. Loesa* are figured on Plate XXI., figs. 11, 11*a*, 11*b*; figs. 11 and 11*b* from Java, where it "feeds on the *Delima* (*Punica granatum*). December. Not common. Scarce in February."—(Horsfield, MS.) Figure 11*a* is copied from the original drawing in the collection of A. Grote, Esq., and who found the larvæ on "*Citrus, Cordia*, and *Phœnix*."

The transformations are also figured among the drawings of Lady Isabella Rose Gilbert. The larva was "found feeding on the Sal tree (*Shorea robusta*) on the 4th August; on the 10th, it inclosed itself within a cocoon, the moth coming out on the 15th September."

951. *PARASA LALEANA, Moore.*

Parasa Laleana, n. sp.—Reddish-testaceous; *fore-wing* with the exterior margin yellowish, a broad transverse ferruginous zigzag-margined band near the base; a black dot in the middle of the disc, one at the posterior angle, and a few at the apical angle; thorax with a black dot on each side. Expanse 1¼ in.

a. N India. Mr. Grote's Drawing.

The larva of *P. Laleana* is figured on Plate XXI., fig. 12, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on *Anona Rohitulla*, *Leea longiflora*, and *Mussænda frondosa*." (Grote, MS. Notes.)

This curious and interesting larva, with its imago, is also figured among the drawings made by Lady Isabella Rose Gilbert, and from her ladyship's "Notes" we extract the following remarks:—"About the middle of October, 1825, I found this caterpillar on a branch of applestree; the head, which was seldom perceptible, was small and

white, and furnished with a pair of minute black eyes; there were six exceedingly small feet placed close to the head, and eight others, which were so short and shapeless as scarcely to come under that denomination. It grew rapidly, gliding along the twigs, and eating the leaves. On the 22nd October it removed to a corner of the cage, and commenced its little web, and was completely inclosed in a few hours, forming an inner case. On the 12th August, 1826, the moth came out. It cut a perfectly circular hole in the top of the case, the portion cut out adhering on the lower side, acting as a kind of hinge."

Genus NAROSA, *Walker*.

NAROSA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1151 (1855).

952. *NAROSA ADALA, Moore* (*Plate* XI*a*, *fig.* 14).

Narosa Adala, n. sp.—Male, white; *fore-wing* covered with numerous pale-brown spots, those about the middle the largest, and somewhat ferruginous; a black dot in middle of the disc; two minute black apical dots: *hind-wing* with two minute black apical dots; antennæ and body pale buff-white. Expanse 1 in.

a. b. c. ♂, and pupa. Java. From Dr. Horsfield's Collection.

The larva and cocoon of *Narosa Adala* are figured on Plate XXI., figs. 13, 13*a*, from Java. "Feeds on the *Siri-kaya* (*Annona squamosa*). December. Scarce."—(Horsfield, MS.)

Genus CANDYBA, *Walker*.

CANDYBA, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1760 (1856).

953. *CANDYBA PUNCTATA, Walker*.

Candyba punctata, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1761.

a. b. ♀. N. India. Presented by General Hearsey.

Habitat.—Mr. F. Walker has given Central Brazil as the habitat of this species, but this is a mistake, which we have proved by an examination of the type specimens in the collection of W. W. Saunders, Esq., and which are labelled "*Coromandel Indo.*"

Stirps VII.—Larvæ PILOSÆ.

Larva elongate, pilose; some genera gregarious, others so only when young; *either* covered with silken hairs, arranged uniformly or in tufts, some being provided with a dense anterior and posterior tuft, or an elongated fascicle projects forward from each side of the head; *or*, having several rows or a single lateral row of fleshy protuberances, from which springs a tuft of silken hairs; also two transverse anterior short dense tufts and a single or double posterior protuberance.

Metamorphosis:—Cocoon oval, firm, elongated, or fusiform, and of a slight texture.

The perfect insect has short broad wings in the male, longer and more ample in the female, and when at rest the hind-wings project beyond the anterior margin of the fore-wings; flies by day, at dusk, or after dark. Antennæ of the male deeply bipectinated, less so in the female, or bipectinated at the base only, and less so thence to the tip in the male, and either moderately bipectinated, serrated, or simple in the female; proboscis very short, invisible, or obsolete; abdomen long and attenuated in the male, very stout and generally with a lanuginose anal tuft in the female.

PHALÆNA *sect.* BOMBYCES, *pt. Linnæus S. N.* (1767).

BOMBYCES (*Larvæ* J. K. L. COLLARIÆ, VILLOSÆ *et* PILOSÆ), *Denis et Schiffermüller, Wien. Verz. pp.* 56, 57 (1776).

BOMBYCIDÆ (*Stirps* III. PILOSÆ), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 25, 27 (1828).

BOMBYX, *pt. Haworth, Lep. Brit. pp.* 76, 95 (1803).

BOMBYCITES LEGITIMI, *pt. Latreille, Gén. Crust. et Ins.* IV. *p.* 217 (1809).

BOMBYCIDÆ, *pt. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 35 (1829); id. *Cat. Brit. Lep. Brit. Mus. p.* 11 (1850). *Westwood, Intr.* II. *p.* 379 (1840). *Duponchel, Catal. Méth. Eur. Lép. p.* 74 (1846). *Walker, List Lep. Het. Brit. Mus. pt.* VII. 1386 (1855).

BOMBYCIDA, *pt. Duncan, in Charlesworth's Ed. Linn.* IX. *p.* 131 (1850).

BOMBYCES *et* BOMBYCITÆ, *Curtis, Syn. Lep.* II. (1832); &c.

Entom. Mag. II. *p.* 383 (1834); id. *Hist. of Ins. 2nd edit. p.* 212 (1841).

Bombycini, *Boisduval, Ind. Méth. p.* 69 (1840).

Bombycites, *Blanchard, Hist. Nat. des Ins.* II. *p.* 362 (1845).

Lasiocampidæ *et* Bombycidæ, *Duponchel, Catal. Méth. Eur. Lép. pp.* 71, 72 (1846).

Lasiocampidi *et* Bombycidi, *Stephens, Catal. Brit. Lep. Brit. Mus. pp.* 15, 48 (1850).

Bombycidæ, *Stainton, Manual Brit. Lep. pp.* 107, 150 (1856).

Bombycina, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 60 (1858).

Genus TRISULA, *Moore.*

Antennæ rather long, minutely bipectinated to about two-thirds of its length.

Palpi short, thick, densely clothed with short hairs; third joint very minute.

Legs with the femur and tibia densely clothed with hairs.

Head, thorax, and abdomen large, broad.

Fore-wings elongate-trigonate; anterior margin straight to near the apex; apical angle rather acute; exterior margin scalloped; posterior margin nearly straight.

Hind-wing rounded; exterior margin scalloped.

951. *TRISULA VARIEGATA, Moore* (*Plate* XII*a*, *fig.* 1).

Trisula variegata. — *Fore-wing* grey, variegated with suffused patches of ferruginous and black; some irregular transverse black lines; black band obliquely across the apex: *hind-wing* pale ferruginous-grey, with a large black discal spot, a submarginal curved black band, the inner space to exterior margin suffused with black; cilia pale ferruginous; antennæ and palpi ferruginous-brown; lower part of head black; top of head and front of thorax grey, passing to deep ferruginous on the thorax and abdomen, the lower part of which is grey; legs greyish, with blackish bands; under-side paler, each wing with a large black discal dot and blackish band. Expanse 2″ in.

♂. N. India. Presented by General Hearsey.

♀. Madras. From Capt. J. M. Jones's Collection.

The larva and pupa of *Trisula variegata* are figured on Plate XXII., figs. 1, 1*a*, 1*b*, copied from the original drawings made by A. Grote, Esq., of Calcutta.

"The larva feeds on the Peepul (*Ficus religiosa*), and changed to a pupa in October, the cocoon being covered with excrement; the imago emerging in June."—(Grote, MS.)

The transformations of this insect are also figured among the drawings made by Lady Isabella Rose Gilbert, her ladyship noting in her MS. that "the larva was found on August 3rd feeding on the Peepul tree, and went into the pupa state on the 4th, covering the cocoon with particles of earth; the perfect insect coming forth on the 15th September."

Genus LASIOCAMPA, *Schrank.*

Lasiocampa, *Schrank, Faun. Boica*, II. *pt.* II. *p.* 153 (1802). *Stephens, Ill. Brit. Ent. Haust.* II. *p.* 38. *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1427.

Phalæna-Bombyx, *pt. Linnæus.*

Metanastria, Pachygastria, Malacosoma, Peripheba, *et* Mesoscelis, *Hübner, Verz. bek. Schmett. pp.* 186–192 (1816).

955. *LASIOCAMPA ACONYTA, Cramer Sp.*

♀ Phalæna-Bombyx Aconyta, *Cramer, Pap. Exot.* II. *p.* 51, *pl.* 131, *f. A.* (1779).

Metanastria Aconyta, *Hübner, Verz. bek. Schmett. p.* 186.

Dirphia Aconyta, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1370.

♀ Bombyx quadricincta, *Fabricius, Mant. Ins.* II. 111. *p.* 11; *Ent. Syst.* III. 1. *p.* 122.

♂ Lasiocampa trifascia *et* L. substrigosa, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *pp.* 1139 1141 (1855).

a. ♂. N. India. Presented by General Hearsey.

b. c. ♀. Canara. Presented by S. N. Ward, Esq.

956. *LASIOCAMPA VITTATA, Walker.*

Lasiocampa vittata, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1140 (1855).

a. b. ♂ ♀. Canara. Presented by S. N. Ward, Esq.
c. ♂. Madras. From Capt. J. M. Jones's Collection.

Genus MURLIDA, *Moore.*

LASIOCAMPA (group 2), *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1110 (1855).

957. *MURLIDA LINEOSA, Walker Sp.*

Lasiocampa lineosa, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1110 (1855).

a. b. ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus LEBEDA, *Walker.*

LEBEDA (groups 1 to 7), *Walker, List Lep. Het. Brit. Mus. pt.* VI. *pp.* 1153–1161 (1855).

DIRPHIA (group 17, *pt.*), *Walker*, id. *p.* 1370.

958. *LEBEDA NOBILIS, Walker.*

Lebeda nobilis, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1156 (1855).

a. b. ♂ ♀. Silhet. Presented by the Trustees of the British Museum.

959. *LEBEDA LATIPENNIS, Walker.*

♂ Lebeda latipennis, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1157 (1855).

a. ♂. N. India. Presented by Colonel Buckley.

The larva and pupa of *Lebeda latipennis* are figured on Plate XXII., figs. 2, 2*a*, copied from Mr. Frith's drawing, in the collection of A. Grote, Esq. "Feeds on *Lagerstræmia indica* and *Nyctanthes sp.?*" —(Grote, MS. Note.)

960. *LEBEDA FERRUGINEA, Walker.*

♂ Lebeda ferruginea, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1158 (1855).

♀ Odonestes ampla, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1112 (1855).

a. ♂. Sillhet. Presented by the Trustees of the British Museum.

961. *LEBEDA PLAGIFERA, Walker.*

♀ Lebeda plagifera, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1459 (1855).

a. ♀. Java. From Dr. Horsfield's Collection.

962. *LEBEDA BUDDHA, Lefebvre Sp.* (*Plate* XII*a*, *fig.* 2, ♂; 2*a*, ♀).

♂ Bombyx Buddha, *Lefebvre, Zool. Journ.* III. *p.* 209 (1827). *Vigors, Cabinet Zool. Soc. of London.*

Lasiocampa Buddha, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1411.

♀ Bombyx Brahma, *Lefebvre, Zool. Journ.* III. *p.* 208 (1827). *Vigors, Cabinet Zool. Soc. of London.*

Lasiocampa Brahma, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1413.

♂ Lebeda plagiata, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1464 (1855).

♀ Lebeda repanda, *Walker*, id. *pt.* VI. *p.* 1460.

? ♂ Phalæna-Bombyx Hyrtaca, *Cramer, Pap. Exot.* III. *p.* 97, *pl.* 249, *f. F.* (1782).

Lasiocampa Hyrtaca, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1436.

a. ♂. Canara. Presented by S. N. Ward, Esq.

b. c. ♂ ♀. Madras. From Capt. J. M. Jones's Collection.

d. e. ♂ ♀. N. India. Presented by General Hearsey.

f. ♀. Java. From Dr. Horsfield's Collection.

963. *LEBEDA NANDA, Moore* (*Plate* XII*a*, *fig.* 3).

Lebeda Nanda, n. sp.—Male, testaceous-brown; *fore-wing* with four slightly oblique paler lines, the space between the two middle lines suffused with brown; a rather large black geminated spot near the posterior angle: *hind-wing* ferruginous at the base; palpi and body beneath ferruginous. Expanse 2¼ in.

a. ♂. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Remark.—Allied to *Gastropacha protracta*, from Africa; figured in Herr. Schäffer's Lep. Exot. Spec. Nov. ser. I. pl. 82, f. 473.

Genus ODONESTIS, *Germar.*

ODONESTIS, *Germar, Bombyc.* II. *p.* 49 (1813). *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 51. *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1109.

PHALÆNA-BOMBYX, *pt. Linnæus.*

BOMBYX, *pt. Fabricius.*

LASIOCAMPA, *pt. Schrank.*

964. *ODONESTIS VITA, Moore* (*Plate* XII*a*, *fig.* 4).

Odonestis Vita, n. sp. — Male, ferruginous; *fore-wing* with two transverse rather indistinct undulated blackish discal lines, having a central white discal spot; a submarginal row of zigzag blackish dots. Expanse 1½ in.

a. ♂. Java. From Dr. Horsfield's Collection.

965. *ODONESTIS BHEROBA, Moore* (*Plate* XII*a*, *fig.* 5).

Odonestis Bheroba, n. sp.—Female, ferruginous; *fore-wing* with two transverse slightly-curved blackish widely-separated discal lines, having a central white discal spot. Expanse 2¼ in.

a. ♀. Darjeeling. From Messrs. Schlagintweit's Collection.

Genus TRABALA, *Walker.*

AMYDONA,* *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1413 (1855).

TRABALA, *Walker*, id. *pt.* VII. *p.* 1785 (1856).

966. *TRABALA LÆTA, Walker* (*Plate* XII*a*, *fig.* 7, ♂; 7*a*, ♀).

♀ Amydona læta, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1416 (1855).

Trabala læta, *Walker*, id. *pt.* VII. *p.* 1785.

a. *b*. ♂ ♀. Java. From Dr. Horsfield's Collection.

* This genus was proposed by me by Mr. Walker, in the pt. [illegible] VII

Trabala læta.—Male, testaceous, greyish along exterior margins; *fore-wing* with a transverse indistinct brown line near the base, and an oblique transverse brown line from the costa near the apex to middle of posterior margin, between which and the outer margin is a zigzag brown line, an indistinct lisal spot, and a dot before it. Expanse of male $1\frac{1}{2}$ in., female $2\frac{5}{8}$ in.

967. *TRABALA VISHNU, Lefebvre Sp.*

♀ Gastropacha Vishnu, *Lefebvre, Zool. Journ.* III. *p.* 207 (1827). *Vigors, Cabinet Zool. Soc. of London. Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1394.

♂ Amydona prasina *et* A. pallida, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1417 (1855).

Trabala prasina *et* T. pallida, *Walker*, id. *pt.* VII. *p.* 1785.

♀ Amydona basalis, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1415 (1855).

Trabala basalis, *Walker*, id. *pt.* VII. *p.* 1785.

Odonestis eucalyptifolia, *MS. Mus. India House.*

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

g. h. ♂ ♀. N. India. Presented by Colonel Buckley.

i. ♀. Penang. Presented by Dr. Cantor.

j. k. ♂. Madras. From Capt. J. M. Jones's Collection.

l. m. ♂ ♀. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

The larva, pupa, and cocoon of *Trabala Vishnu* are figured on Plate XXII., figs. 3, 3*a*, 3*b*, from India, copied from the original drawings in the collection of A. Grote, Esq.; figs. 3*c*, 3*d*, from Java, copied from Dr. Horsfield's drawings. "Feeds on the castor-oil plant (*Ricinus communis*)."—(Grote, MS. Note.)

The transformations of this insect were also observed and figured in Java by Dr. Horsfield. "Feeds on the *Delima* (*Punica granatum*). December to April. Common."—(Horsfield, MS.)

Lady Isabella Rose Gilbert also observed the transformations of both sexes of *Trabala Vishnu*, and gives the following note: "August 12th, found the larvæ feeding on the Sal tree (*Shorea robusta*); on the

28th it spun a cocoon on the back of a leaf, and on the 16th September the moth came out (a male), of a delicate pale-green colour. The cocoon of this insect was covered with small short stiff hairs, which adhered so closely to the hand, that pincers were necessary to extract them. The larva, when touched, left a sensation on the skin similar to that of the sting of the nettle."

"On the 20th June, 1825, a caterpillar of this specie was brought to me on a branch of pomegranate-tree, and which, after feeding some days, seemed restless; and on the 26th I found it had, during the night, inclosed itself in a cocoon suspended from one of the branches. On the 12th July the moth (a female) came out."

Genus GASTROPACHA, *Ochs.*

GASTROPACHA, *Ochsenheimer, S.* III. *p.* 239 (1810). *Curtis, Brit. Ent.* I. *p.* 24. *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1389.

PHALÆNA-BOMBYX, *pt. Linnæus.*

BOMBYX, *pt. Fabricius.*

LASIOCAMPA, *pt. Schrank.*

968. *GASTROPACHA DERUNA, Moore* (*Plate* XII*a*, *fig.* 6).

Gastropacha Deruna, n. sp.—Female, ferruginous; *fore-wing* with two transverse slightly-curved dark zigzag lines, the space along their outer margin being also dark, the space between the lines and about the base of the wing suffused with grey; three greyish-white submarginal apical dots, and three zigzag marks before the posterior angle: *hind-wing* with a suffused dark streak from abdominal angle. Expanse 2¾ in.

a. ♀. Java. From Dr. Horsfield's Collection.

Genus ESTIGENA, *Moore.*

MEGASOMA (group 4), *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1152 (1855).

969. *ESTIGENA PARDALE, Walker Sp.* (*Plate* XIII*a*, *fig.* 1, ♂; 1*a*, ♀).

Magasoma pardale, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1153 (1855).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

970. *ESTIGENA NANDINA, Moore.*

Estigena Nandina, n. sp.—Male, pale ferruginous. Distinguished from *Estigena pardale* by the *fore-wing* being without the numerous transverse markings, the *hind-wing* being also without the testaceous spot towards the inner margin; the latter wings are also narrower and longer. Expanse 1¾ in.

a. ♂. N. India. Presented by General Hearsey.

Genus TARAGAMA, *Moore.*

MEGASOMA,* *Boisduval, Feisthamel, Ann. Soc. Ent. France,* I. *p.* 340. *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1446.

STREBLOTE, *pt. Hübner, Verz. bek. Schmett. p.* 193, *n.* 1980 (1816).

971. *TARAGAMA GANESA Lefebvre Sp.*

♂ Bombyx Ganesa, *Lefebvre, Zool. Journ.* III. *p.* 211 (1827). *Vigors, Cabinet Zool. Soc. of London.*

♀ Bombyx Siva, *Lefebvre, Zool. Journ.* III. *p.* 210 (1827). Lasiocampa Ganesa *et* L. Siva, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *pp.* 1443-44.

♀ Megasoma venustum, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1449 (1855).

♂ Megasoma albicans, *Walker*, id. *p.* 1450 (1855).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

g. h. ♂ ♀. Dukhun. Presented by Col. Sykes.

i. ♀. Canara. Presented by S. N. Ward, Esq.

j. k. ♂ ♀. Punjab. Presented by General Hearsey.

The larva and pupa of *Taragama Ganesa* are figured on Plate XXII., figs. 4, 4*a*, copied from the original drawing in the collection of A. Grote, Esq. "Feeds on *Hyperanthera moringa*." — (Grote, MS. Note.)

The transformations also observed and figured in Java by Dr. Horsfield. "Feeds on the *Pilang* (*Mimosa sp.*) and the *Kedawung*. December."—(Horsfield, MS.)

The transformations of *Megasoma Ganesa* are figured among the drawings of Lady Isabella Rose Gilbert, a larva being "found on

* Preoccupied among Coleoptera in 1825.

July 19th, which inclosed itself in a cocoon on the 24th, the moth coming out on the 13th August. The moth drops down as if dead when touched, and remains so for a few minutes."

Genus SUANA, *Walker.*

SUANA, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1502 (1855).

LEBEDA (group VIII. *pt.*), *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1462.

972. *SUANA BIMACULATA, Walker Sp.* (*Plate* XIIIa, *fig.* 2, ♂ ; 2*a*, ♀).

♂ Lebeda bimaculata *et* concolor, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1163 (1855).

♀ Suana ampla, *Walker, List Lep. Het. Brit. Mus. pt.* VI. *p.* 1502 (1855).

a. b. c. d. e. f. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva, pupa, and cocoon of *Suana bimaculata* are figured on Plate XXIII., figs. 1, 1*a*, 1*b*, from Java. "Feeds on a species of *Psidium*, bearing the native name of *Jambu-klutu*. November to January. Common during the rains."—(Horsfield, MS.)

The transformations of *Suana bimaculata* are also figured among Edgar Leopold Layard's drawings, from Ceylon.

Stirps VIII.—Larvæ LIGNIVORÆ.

PHALÆNA *sect.* BOMBYCES, *pt. Linnæus, S. N.* (1767).

PHALÆNA *sect.* NOCTUÆ, *pt. Linnæus, S. N.* I. II. *pp.* 809, 833 (1767).

BOMBYCES (*Larvæ* M. N. O.), *Denis et Schiffermüller, Wien. Verz. pp.* 59, 60 (1776).

BOMBYCIDÆ (*Stirps* IV. LIGNIVORA), *Horsfield, Catal. Lep. Mus. E.I.C. pp.* 25, 27 (1828).

BOMBYCITES, *pt. Latreille.*

This stirps present in their transformations three sections.

SECTION I.

Larva naked, vermiform; constructs a portable silken case (or habitaculum*), which is, in most genera, fortified exteriorly with pieces of grass-stems, or sticks, or leaves, &c., in which it resides and undergoes its transformations.

The perfect insect has, generally, in the male, long and narrow wings; flies by day; antennæ either bipectinated throughout, or only so at the base, with the tip filiform or serrated, or ciliated; proboscis obsolete; abdomen long, slender, and extensile. The female generally (?) wingless, and, as in Psyche, vermiform, with rudimentary legs and antennæ, and seldom or never quits her case, but receives the caresses of the male whilst still confined within. In the genus *Fumea* the female is araneiform, and has legs and simple antennæ, and emerges from her case and sits on the outside.

BOMBYCITES LEGITIMÆ, *pt. Latreille, Gén. Crust. et Ins.* IV. *p.* 217 (1809).

ARCTIIDÆ, *pt. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 54 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 49 (1850). *Westw. Intr.* II. *p.* 384 (1840).

PSYCHIDES, *Boisduval, Ind. Méth. p.* 78 (1840). *Blanchard, Hist. Nat. des Ins.* II. *p.* 363 (1845). *Newman, Trans. Ent. Soc. Lond. n. s.* III. *p.* 7 (1854).

* Lansdown Guilding, Trans. Linn. Soc. XV. p. 371 (1827).

PSYCHIDÆ, *Bruand, Monog. Psych. pp.* 17, 113 ( ). *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 926 (1855). *Stainton, Manual Brit. Lep. pp.* 108, 164 (1856).

COSSI, *pt. Newman, Sph. Vesp. p.* 41 (1832).

PSYCHIDI, *Stephens, Catal. Brit. Lep. Brit. Mus. p.* 55 (1850).

(ECETICINA, *Herr. Schäffer, Lep. Exot. Spec. Nov. p.* 50 (1858).

Genus EUMETA, *Walker.*

EUMETA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 964 (1855).

973. *EUMETA CRAMERI, Westwood Sp.*

Oiketicus Cramerii, *Westwood, Proc. Zool. Soc.* (1854), *p.* 236, *pl.* 37, *f.* 4.

Eumeta Cramerii, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 964.

a. b. ♂. Canara. Presented by S. N. Ward, Esq.

974. *EUMETA HORSFIELDI, Moore.*

Eumeta Horsfieldi, n. sp.—Male, brown; *fore-wing* suffused with grey along the costa and on the disc; an indistinct submarginal row of black dots: *hind-wing* pale brown. Expanse 1¾ in.

a. ♂. Java. From Dr. Horsfield's Collection.

975. *EUMETA RAFFLESI, Moore.*

Eumeta Rafflesi, n. sp.—Male, greyish-white; *fore-wing* slightly suffused with brown, with a submarginal row of brown dots; *hind-wing* pale ferruginous-brown, the base yellowish; antennæ pale brown; palpi ferruginous-brown above; abdomen ferruginous-brown; tuft greyish-white. Expanse 1⅝ in.

a. ♂. Java. From Dr. Horsfield's Collection.

Genus NEMETA, *Walker.*

NEMETA, *Walker, List Lep. Het. Brit. Mus. pt.* IV. *p.* 968 (1855).

976. *NEMETA LOHOR, Moore* (*Plate* XIII*a*, *fig.* 3).

Nemeta Lohor, n. sp.—Male, deep ferruginous; *fore-wing* with patches on the disc, and a small patch at the apex, black; *hind-wing* with a triangular hyaline space from exterior margin; the anterior and abdominal margins fuliginous-brown; thorax with two black

spots in front, and one on each side; base of abdomen black. Expanse 1¼ in.

a. ♂. Java. From Dr. Horsfield's Collection.

SECTION II.

Larva elongate, finely pilose, somewhat gregarious. Metamorphosis in a slight subterranean folliculus.

The perfect insect has long wings, and flies by darkness; antennæ slightly bipectinated in the male, simple or slightly serrated in the female; proboscis short; abdomen long, stout.

PHALÆNA *sect.* BOMBYCES, *pt. Linnæus, S. N.* I. II. (1767).

BOMBYCES (*Larvæ* M. SUBPILOSÆ), *pt. Denis et Schiffermüller, Wien. Verz. p.* 59 (1776).

BOMBYX, *pt. Haworth, Lep. Brit. p.* 76 (1803).

NOTODONTIDÆ, *pt. Stephens, Ill. Brit. Ins. Haust.* II. *p.* 10 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 37 (1850). *Newman, Sph. Vesp. p.* 42 (1832). *Walker, List Lep Het. Brit. Mus. pt.* IV. *p.* 977 (1855). *Stainton, Manual Brit. Lep. pp.* 107, 114 (1856).

NOTODONTITES, *pt. Newman, Entom. Mag.* II. *p.* 383 (1834); id. *Hist. of Ins. 2nd edit. p.* 213 (1841).

ARCTIIDÆ, *pt. Westwood, Intr.* II. *p.* 384 (1840).

NOTODONTIDES, *pt. Boisduval, Ind. Méth. p.* 84 (1840). *Blanchard, Hist. Nat. des Ins.* II. *p.* 365 (1845).

PYGÆRITES, *pt. Blanchard, Hist. Nat. des Ins.* II. *p.* 365 (1845).

PYGÆRIDÆ, *Duponchel, Catal. Méth. Eur. Lép. p.* 95 (1846).

PYGERIDI, *Stephens, Catal. Brit. Lep. Brit. Mus. p.* 37 (1850).

Genus ANTHEUA, *Walker.*

ANTHEUA, *Walker, List Lep. Het. Brit. Mus. pt.* III. *p.* 687 (*May 14th*, 1855).

DIASTEMA, *Herr. Schäffer, Lep. Exot. Spec. Nov. fig.* 379 (1855).

977. *ANTHEUA DISCALIS, Walker* (*Plate* XIIIa, *fig.* 1, ♂).

Antheua discalis, *Walker, List Lep. Het. Brit. Mus pt.* III. *p.* 767 (1855).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Antheua discalis* are figured on Plate XXIII., figs. 2, 2*a*, from Java. "Feeds on a species of *Hedysarum*, bearing the native name of *Brobos*. March."—(Horsfield, MS.)

Genus ANTICYRA, *Walker*.

ANTICYRA, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1091 (1855).
DINARA, *Walker*, id. *pt.* VII. *p.* 1699 (1856).

978. *ANTICYRA COMBUSTA, Walker* (*Plate* XIIIa, *fig.* 5).

Anticyra combusta, *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1092 (1855).
Dinara lineolata, *Walker*, id. *pt.* VII. *p.* 1700 (1856).

a. b. c. d. ♂ ♀. Java. From Dr. Horsfield's Collection.

Remark.—We have compared specimens of *Anticyra combusta* with the type of *Dinara lineolata*, in the collection of W. W. Saunders, Esq., and find them to be identical.

The larva and pupa of *Anticyra combusta* are figured on Plate XXIII., figs. 3, 3*a*, from Java. "Feeds on the *Tubu* (*Saccharum sp.*). January."—(Horsfield, MS.)

Genus PHALERA, *Hübner*.

PHALERA, *Hübner, Verz. bek. Schmett. p.* 146 (1816). *Walker, List Lep. Het. Brit. Mus. pt.* V. *p.* 1019.
ACROSEMA, *Meig. Eur. Schmett.* III. *p.* 24 (1832).
HAMMATOPHORA, *Westwood, Brit. Moths*, I. *p.* 63 (1842).
PHALÆNA-BOMBYX, *pt. Linnæus.*
LARIA, *pt. Schrank.*
PYGÆRA, *pt. Ochsenheimer, Schmett. von Eur.* (1810).
SERICARIA, *pt. Latreille, Fam. Nat. p.* 474 (1825).
MELALOPHA, *pt. Hübner.*

979. *PHALERA JAVANA, Moore* (*Plate* XIIIa, *fig.* 6).

Phalera Javana, n. sp.—*Fore-wing* silvery-grey, dotted with brown, suffused with brown along the costa; a sub-basal transverse double irregular black line, the inner line with a black spot on posterior margin; two discal pale-margined spots, the first longitudinal, the other transverse; a submarginal double undulated black line upward from near posterior angle, and terminating at half its length in a

triangular apical patch, which is ferruginous, with darker longitudinal streaks; some irregular ferruginous zigzag marginal lines apically: *hind-wing* pale brown, darker along the margin, and with whitish fringe to the abdominal margin; upper part of head and front of thorax pale ferruginous; sides of thorax silvery-grey; thorax with a double black-margined dark ferruginous quadrate spot; lower part of head, palpi, and legs, ferruginous; abdomen ferruginous-brown above, yellowish beneath. Expanse 2¼ in. to 2½ in.

a. 0. c. ♂ ♀. Java. From Dr. Horsfield's Collection.

The larva and pupa of *Phalera Javana* are figured on Plate XXIII., figs. 4, 4*a*, from Java. "Feeds on the *Rawe* (*Dolichos ruriens*). April."—(Horsfield, MS.)

980. *PHALERA RAYA, Moore.*

Phalera Raya, n. sp.—Fore-wing silvery-grey, with the transverse lines indistinct, the apical patch ferruginous, its margins undulated; discal spots whitish; some indistinct marginal marks; a suffused blackish spot near the posterior angle: *hind-wing* silvery greyish-brown; ciliæ white, spotted with ferruginous; upper part of head, front of thorax, and abdomen anteriorly above, pale ferruginous; lower part of head and palpi deep ferruginous; sides of thorax silvery-grey, quadrate spot indistinct; thorax beneath and legs brown; abdomen beneath and anally above testaceous. Expanse 2⅝ in.

a. b. Darjeeling. From Messrs. Schlagintweit's Collection.

981. *PHALERA SANGANA, Moore.*

Phalera Sangana, n. sp.—Fore-wing dark brown, slightly silvery-brown basally and along posterior margin, with numerous transverse undulated darker lines, a sub-basal transverse black line, and a submarginal double line widening apically where its interspace is ferruginous-brown; some marginal black marks: *hind-wing* dark brown; thorax dark ferruginous-brown, sides greyish; upper part of head *pure white*, lower part and palpi dark ferruginous; abdomen brown, with darker suffused bands; tip pale. Expanse 3¹ in.

a. b. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

982. *PHALERA GROTEI, Moore.*

Phalera Grotei, n. sp.—Fore-wing brown, with numerous indistinct undulated lines; silvery basally and along the posterior margin; a sub-basal transverse black line; a submarginal black double line with its tip of a buff-colour; marginal lines zigzag: *hind-wing* brown, with broad darker brown marginal band; upper part of head whitish, front of thorax brown, sides and hind-part of thorax grey; abdomen pale brown, with blackish bands. Expanse 2¼ in.

a. Bengal. Mr. Grote's Drawing.

The larva and pupa of *Phal. Grotei* are figured on Plate XXIII., figs. 5, 5*a*, 5*b*, copied from the original drawing of A. Grote, Esq.

The larva "feeds on *Casuarina*."

983. *PHALERA PARIVALA, Moore.*

Phalera Parivala, n. sp.—Fore-wing suffused with black, grey at the base and at the posterior angle, with various sub-basal black undulating lines and a black patch on posterior margin; the apical ferruginous patch broad, extending considerably across the wing, and having regular undulated margins; some ferruginous marginal and black submarginal spots: *hind-wing* fuliginous, palest basally; cilia paler, with dark spots; sides of thorax grey; upper part of head and front of thorax pale ferruginous; thorax with blackish quadrate spot; abdomen above pale ferruginous; tip testaceous; body beneath and legs brown. Expanse 3⅜ in.

a. b. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

SECTION III.

Larva elongate, fleshy, either naked or with only a few fine short straggling hairs, with a horny plate on the second segment; feeds in the wood of trees, or at the roots of plants.

Metamorphosis:—Cocoon of slight material, either formed within the cell or bore of the larva, or subterranean.

The perfect insect has very long wings; flies at dusk; antennæ either bipectinated to the middle, thence to tip serrated or simple, in the male; female, simple or slightly ciliated, or short and simple; proboscis obsolete; abdomen long, stout, or slender.

Phalæna *sect.* Bombyces *et* Noctuæ, *pt. Linnæus, S. N.* (1767).

Bombyces (*Larvæ* N. O. Lignivoræ *et* Radicivoræ), *Denis et Schiffermüller, Wien. Verz. pp.* 56, 60 (1776).

Bombyx, *pt. Haworth, Lep. Brit. p.* 76 (1803).

Bomlycites-Hepialites, *Latreille, Gén. Crust. et Ins.* IV. *p.* 216 (1809)

Hepialidæ, *Stephens, Ill. Brit. Ins. Haust.* II. *p.* 3 (1829); id. *Catal. Brit. Lep. Brit. Mus. p.* 34 (1850). *Swainson, Cabinet Cyclop. Ins. p.* 106 (1840). *Westwood, Intr.* II. *p.* 375 (1840). *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1548 (1856). *Stainton, Manual Brit. Lep. pp.* 107, 109 (1856).

Cossida, *pt. Duncan, in Brewster's Edinb. Encycl.* IX. *p.* 131 (1830).

Cossi, *pt. Newman, Sph. Vesp. p.* 41 (1832).

Cossidæ, Zeuzeridæ, Cossites *et* Xyleutites, *Newman, Entom. Mag.* I. *p.* 68 (1832); II. *p.* 383 (1834); id. *Hist. of Ins. 2nd edit. p.* 213 (1841).

Zeuzerides, *Boisduval, Ind. Méth. p.* 75 (1840).

Hepialites, *pt. Blanchard, Hist. Nat. des Ins.* II. *p.* 384 (1840).

Cossidæ, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1509 (1856).

Zeuzeridæ, *Stainton, Manual Brit. Lep. pp.* 107, 109 (1856).

Epialoidea, *et* Cossina, *pt. Herr. Schäffer, Lep. Exot. Spec. Nov. pp.* 56, 58 (1858).

Genus COSSUS, *Fabricius.*

Cossus, *Fabricius, Ent. Syst.* III. I. (1793). *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1510.

Xyleutes *et* Hypopta, *Hübner, Verz. bek. Schmett. p.* 195 (1816).

Cryptobia, *Boisduval.*

Phalæna-Bombyx, *pt. Linnæus.*

Phalæna-Noctua, *pt. Linnæus.*

981. *COSSUS STRIX, Linnæus Sp.*

Phalæna-Noctua Strix, *Linnæus, Syst. Nat.* I. II. *p.* 833 (1767); *Mus. Lud. Ulr. p.* 377. *Clerck, Icon. pl.* 51, *f.* 1.

Cossus Strix, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1521

Phalæna-Bombyx Strix, *Cramer, Pap. Exot.* II. *p.* 77, *pl.* 145, *f. A.*

Bombyx Strix, *Olivier, Enc. Méth.* V. *p.* 56.

Xyleutes Strix, *Hübner, Verz. bek. Schmett. p.* 195.

a. b. c. ♂ ♀. Java. From Dr. Horsfield's Collection.

Genus ZEUZERA, *Latreille.*

Zeuzera, *Latreille, Hist. Nat. des Ins.* XIV. *p.* 175 (1802). *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1528.

Latagia *et* Chalcidica, *Hübner, Verz. bek. Schmett. p.* 196–7 (1816).

Xyrena, *Boisduval, Herr. Schäffer, Lep. Exot. Spec. Nov. ser.* I. *f.* 162 (1854).

Eudoxyla, *Boisduval, Herr. Schäffer*, id. *f.* 163 (1854).

Phalæna-Noctua, *pt. Linnæus.*

Cossus, *pt. Fabricius.*

Hepialus, *pt. Schrank.*

Morpheis, *pt. Hübner.*

985. *ZEUZERA LEUCONOTA, Stephens.*

Zeuzera leuconata, *Stephens, MS. Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1537 (1856).

a. Java. From Dr. Horsfield's Collection.

b. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

986. *ZEUZERA SIGNATA, Walker.*

Zeuzera signata, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1537 (1856).

a. b. ♂ ♀. Java. From Dr. Horsfield's Collection.

987. *ZEUZERA MINEUS, Cramer Sp.*

Phalæna-Bombyx Mineus, *Cramer, Pap. Exot.* II. *p.* 52, *pl.* 131, *f. D.* (1782). *Donovan, Ins. of India, pl.*

Zeuzera Mineus, *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1535.

Chalcidica Minea, *Hübner, Verz. bek. Schmett. p.* 197.
Zeuzera viridicans, *Eschscholtz, in Kotzebue's Voy. p.* 219, *pl.* , *f.* 29.

a. Java. From Dr. Horsfield's Collection.

988. *ZEUZERA INDICA, Boisduval.*

Zeuzera indica, *Boisduval, Herr. Schäffer, Lep. Spec. Nov. ser.* I. *f.* 166 (1854). *Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1536.

a. ♂. N. India. Presented by Col. Buckley.

Genus PHASSUS, *Stephens.*

Phassus, *Stephens, MS. Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1566 (1856).
Epiolus, *pt. Boisduval. Herr. Schäffer.*

989. *PHASSUS DAMOR, Moore.*

Phassus Damor, n. sp.—Brown; *fore-wing* with numerous indistinct transverse greyish undulated lines, a large irregular-shaped dark ferruginous-brown greyish-margined discal mark, disposed transversely from near the base, then along the disc, where it widens; its anterior margin is defined by a recurved silvery-grey line, at the end of which apically is a narrow dark-brown streak: *hind-wing* with some grey and brown indistinct spots about the apex; thorax greyish-brown, the sides dark ferruginous-brown. Expanse 3¼ in.

a. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

990. *PHASSUS ABOE, Moore.*

Phassus Aboe, n. sp.—Dark fuliginous-brown; *fore-wing* varied with indistinct ferruginous-brown streaks; a white discal dot; a narrow greyish line from near base of costal vein, extending very obliquely to below the disc, and then ascending obliquely to the costa one-third from the apex; also a line extending transversely submarginally. Expanse 2¼ in.

a. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

Genus HEPIALUS, *Fabricius.*

Hepialus, *Fabricius, Syst. Ent. p.* 589 (1775).

Gorgopis, *pt.* Gazoryctra, Pharmacis, *et* Triodia, *Hübner, Verz. bek. Schmett. p.* 198 (1816).

Phalæna-Noctua, *pt. Linnæus.*

991. *HEPIALUS NEPALENSIS, Stephens.*

Hepialus nepalensis, *Stephens, MS. Walker, List Lep. Het. Brit. Mus. pt.* VII. *p.* 1557 (1856).

a. Darjeeling. From Indian Collection, Exposition Universelle at Paris, 1855.

APPENDIX.

P. c.

322. No. 755. Add specimens *c. f. g.* Calcutta. Presented by W. S. Atkinson, Esq. "Flies in October and November."—(Atkinson, *in litt.*)

330. No. 779. *c. f.* ♂ ♀. (but with the oblique band narrower than in Javan specimens) Moulmein. Presented by W. S. Atkinson, Esq.

"Found abundantly last January among the mountains near Moulmein. It flies only at dusk, and haunts dark holes and caverns about the margins of streams—at least, it was only in such localities that I found it."—(Atkinson, *in litt.*)

349. No. 838. Specimens *f. g. h.* ♂ ♀. Calcutta. Presented by W. S. Atkinson, Esq.

346. No. 825. Add specimens *d. e.* ♂ ♀. Calcutta. Presented by W. S. Atkinson, Esq.

"This is very common round Calcutta, but seems confined to the Delta. I have never found it in houses from the Hill. The flight [of the male] is very like that of the European *Oxyptila atlantica*, but stronger, and, like that insect, it is a day-flier. The larva is polyphagous, and I have found it nearly all the year round in a *Jatropha* tree in my garden. Female wingless."—(Atkinson, *in litt.*)

Remark.—The transformations of this species (figured on Pl. XV., figs. 7 and 8) have recently been described by *Atkinson*!

350. No. 859. Add specimens *f.* ♂. Calcutta. Presented by W. S. Atkinson, Esq.

351. No. 13. Add specimens *c. e.* ♂. Calcutta. Presented by W. S. Atkinson, Esq.

352. [illegible] Presented by W. S. Atkinson, Esq.

Page.

371. No. 995. Add specimens *b. c. d. e.* ♂ ♀. Calcutta. Presented by W. S. Atkinson, Esq.

"Larva hairy, grey; gregarious; feeds on *Zizyphus jujuba*."—(Atkinson, *in litt.*)

397. No. 919. Fresh specimens of *Antheræa Roylei* are of a dull *greenish-buff*, not plain buff-colour.

434. No. 982. Add specimen *b.* ♂. Calcutta. Presented by W. S. Atkinson, Esq.

"Larva very delicate light blue-green on the back; with a bright sulphur-yellow band along the spiracles, which are black; immediately above this is a band of yellowish pea-green divided longitudinally by a pale line; a slightly-raised wart on the sides of each segment, from which proceeds a pencil of very fine silky-white hairs. Penultimate segment protuberant. The parts below the spiracles pea-green, with a black wart immediately above each leg, except the last pair, which are very anomalous, resembling those of *Cerura*, set round with black bristly hairs, with cilia of a yellowish-green colour, and which can be protruded from the extremities at pleasure, as in *Cerura*. These legs are elevated when the larva is at rest, but are used for clasping the leaf or twig when in motion. The head is large, of a greenish fawn-colour; jaws reddish. The anterior portion of the segment behind the head opens somewhat widely to receive it, and the upper front is furnished with two erect horns of a dull orange-yellow, set round with black bristly hairs. Fore-legs red. After two or three moults, the posterior legs lose their abnormal form, and, apparently, the protractile ciliæ; they remain somewhat long, but perform the ordinary functions of the other membranous legs. Feeds on *Cassia fistula*."—(Atkinson, *in litt.*)

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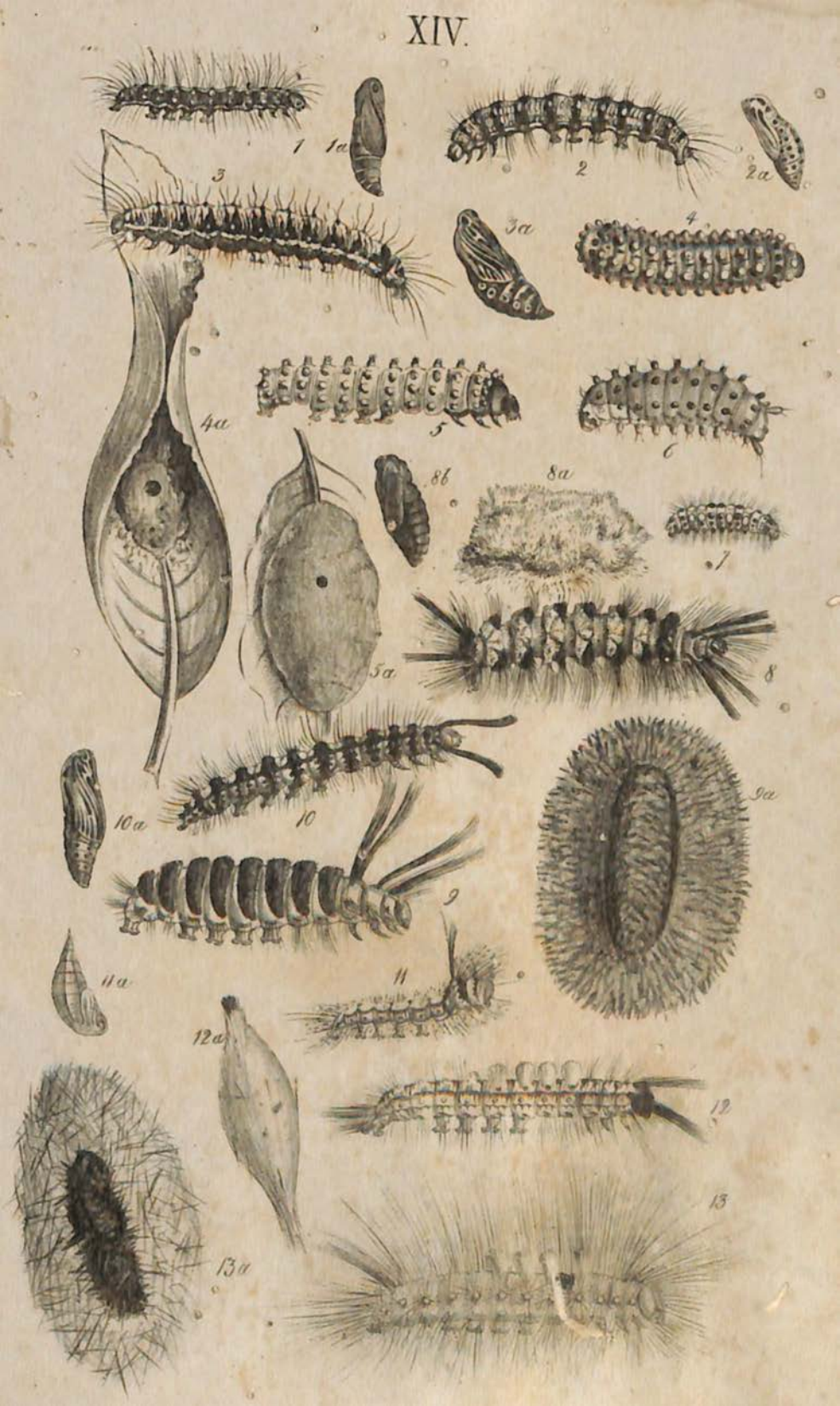
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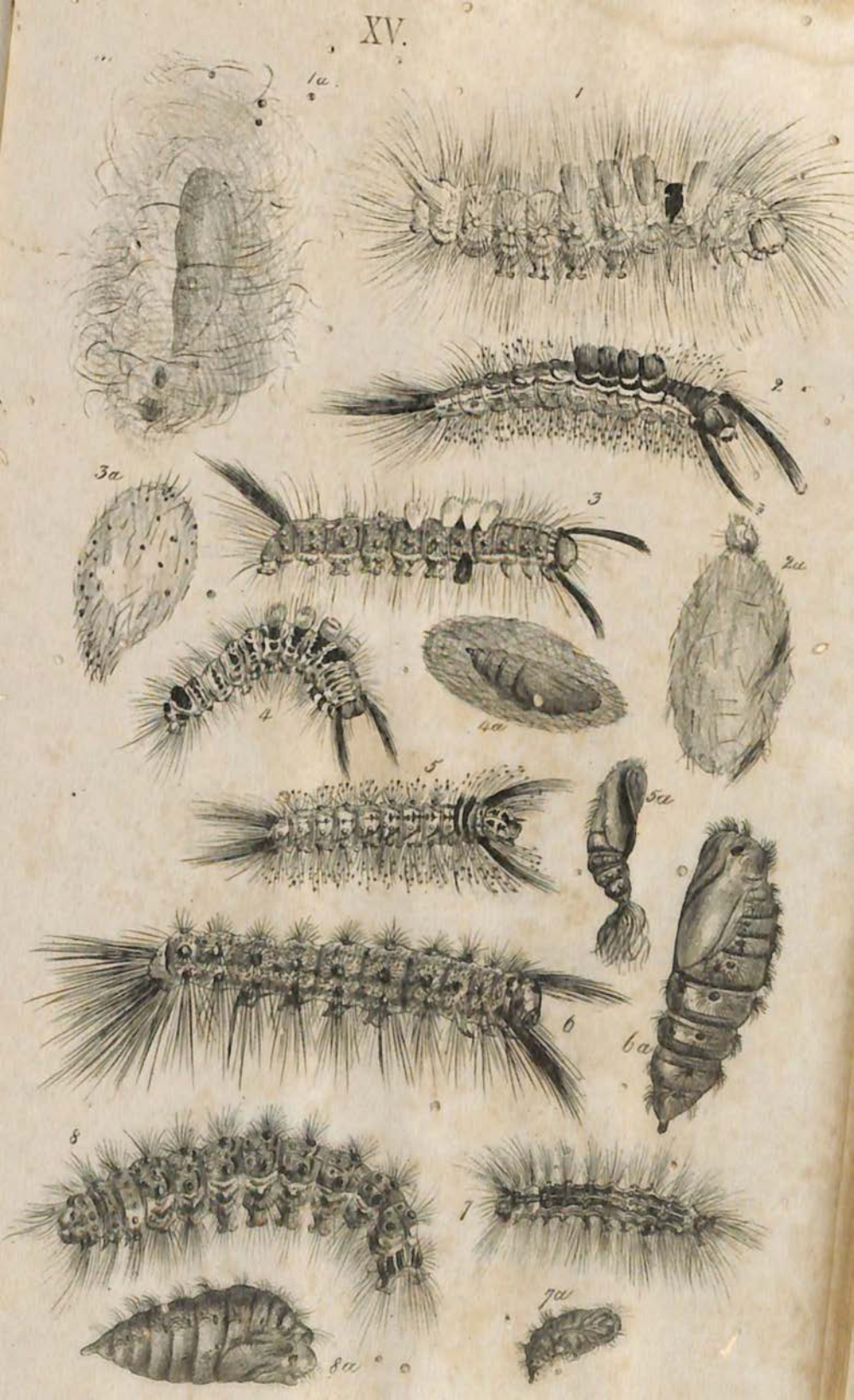
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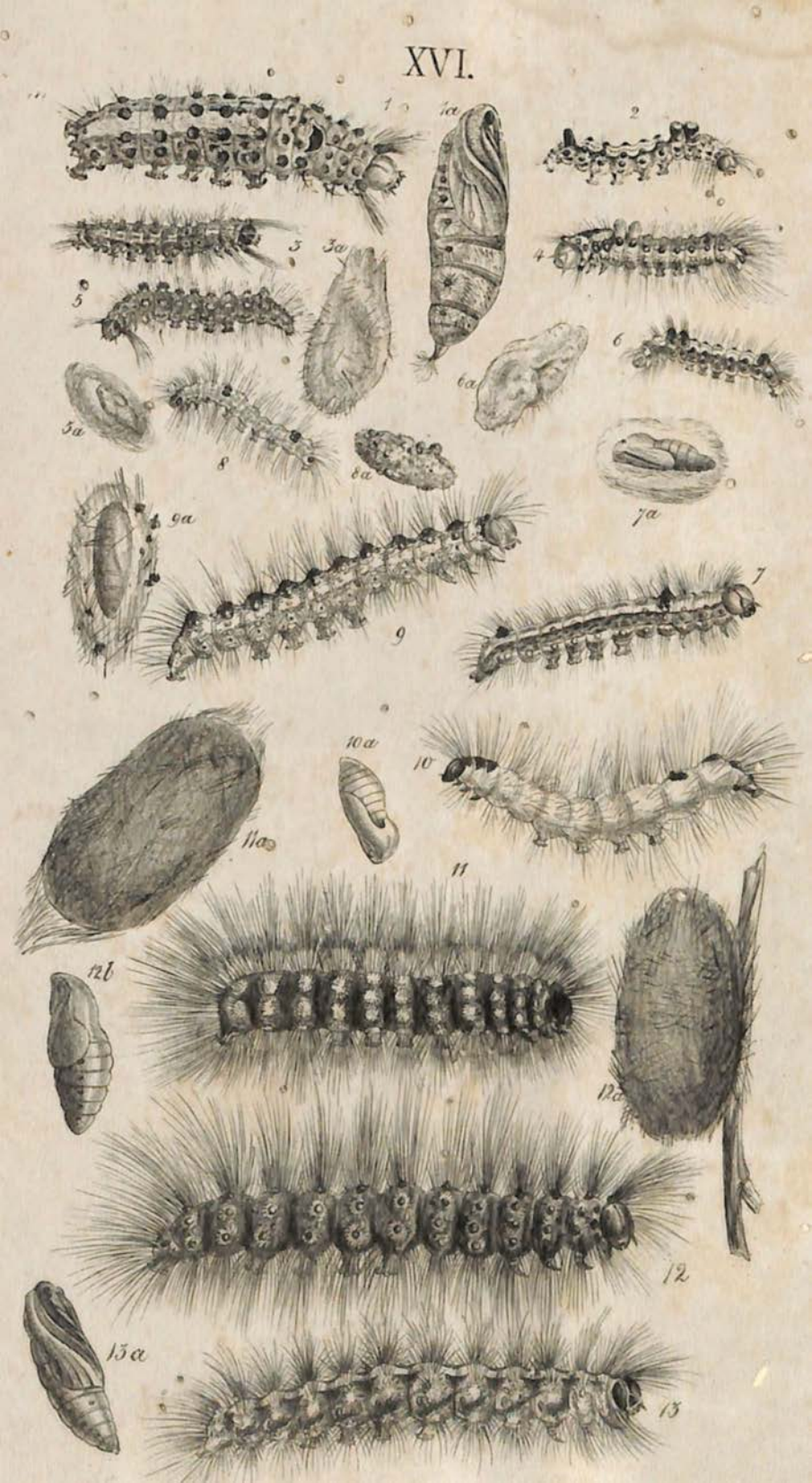
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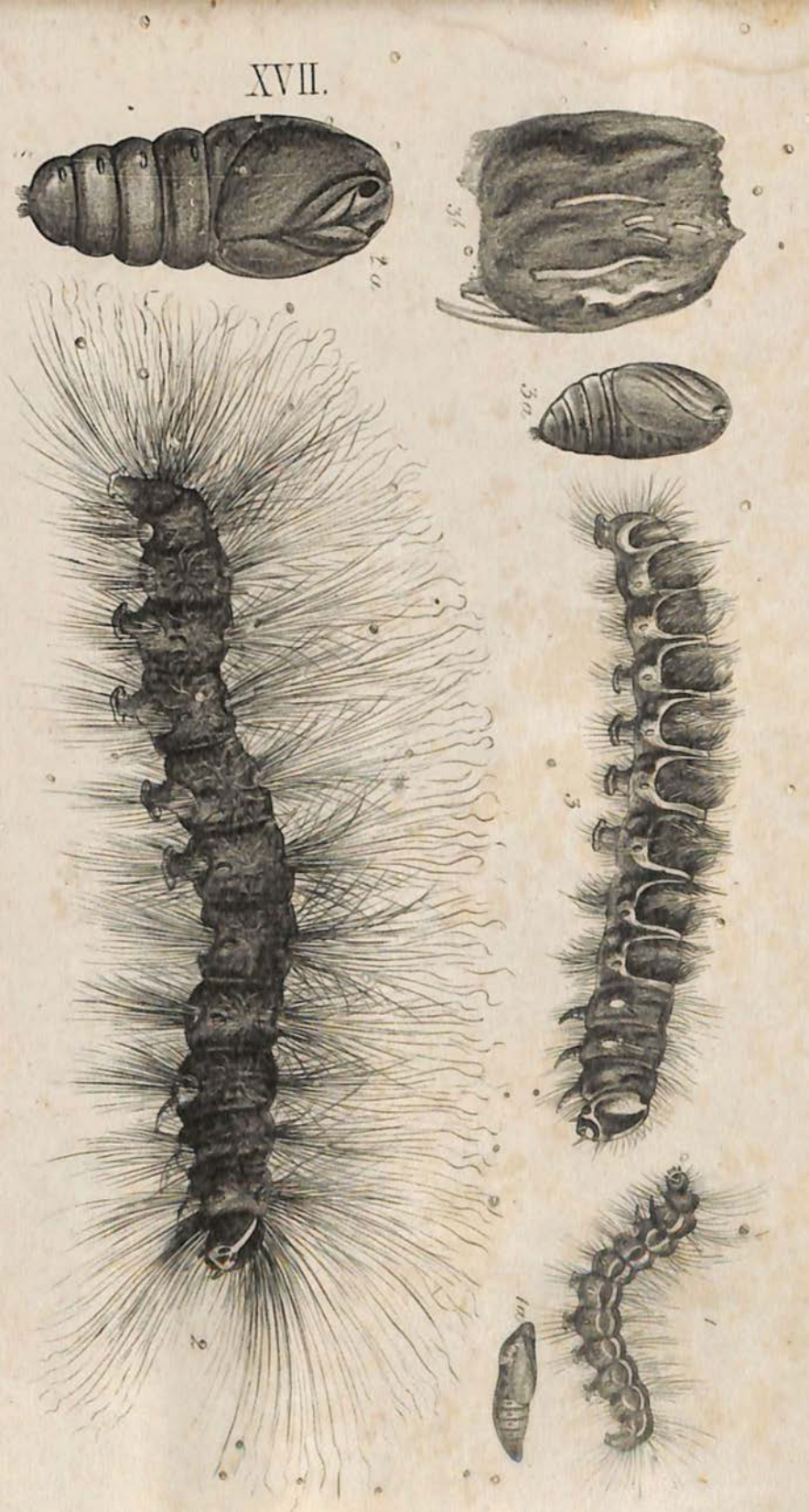
XVII.



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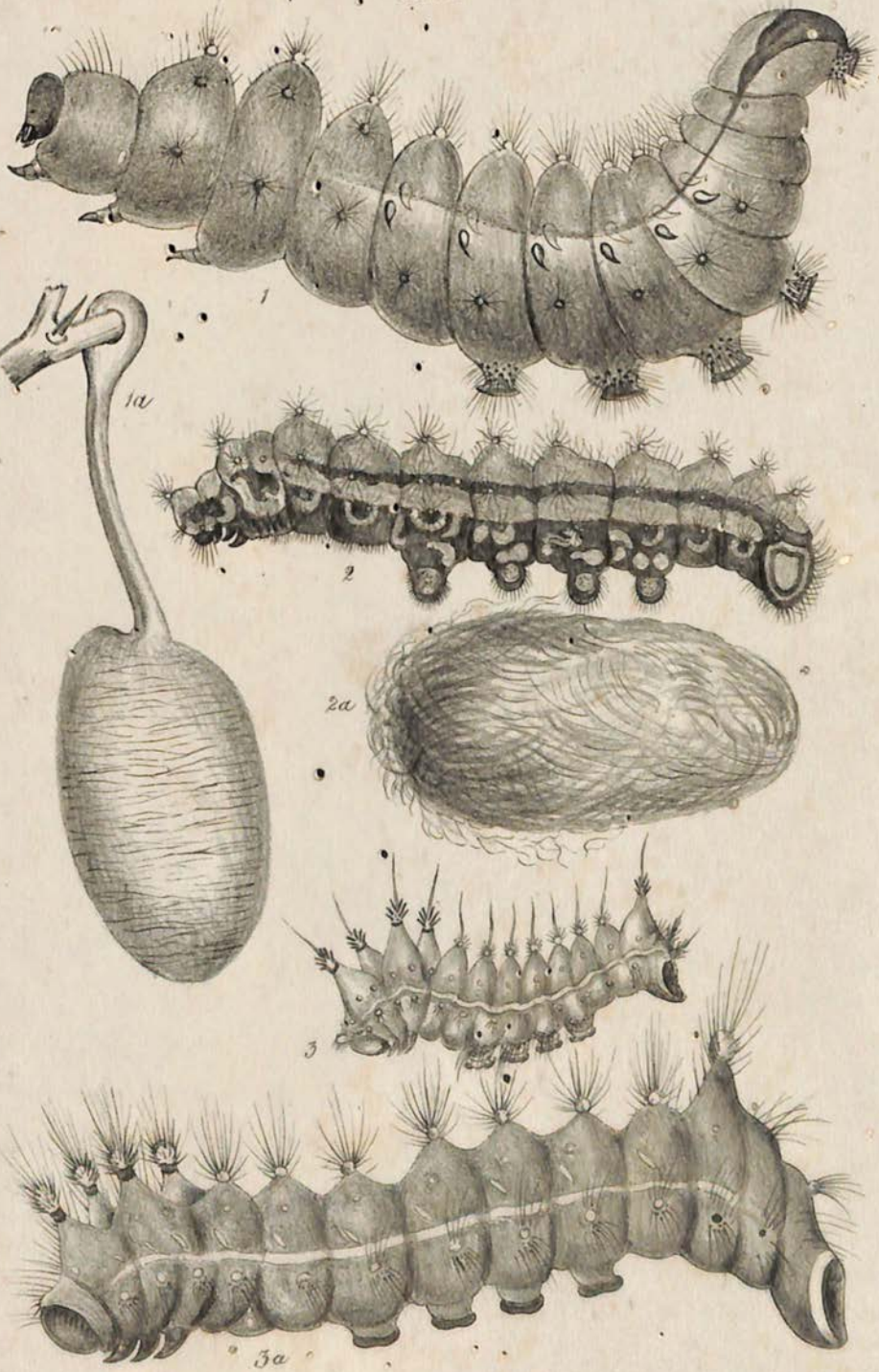
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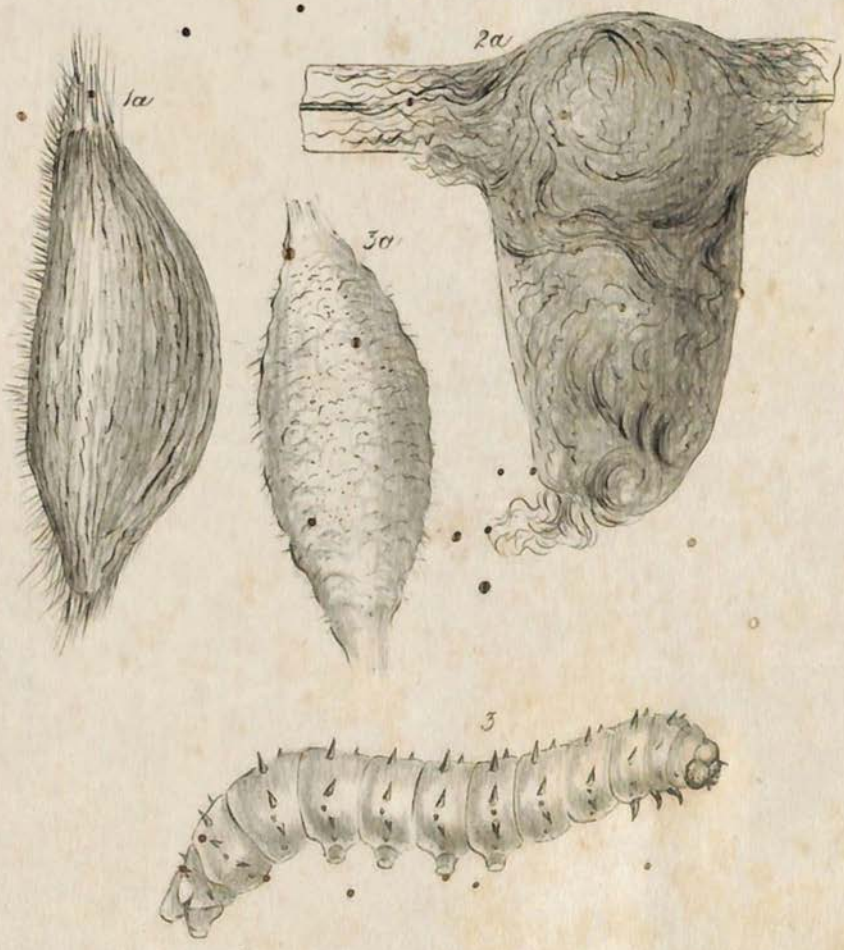

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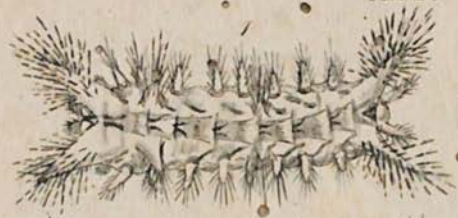
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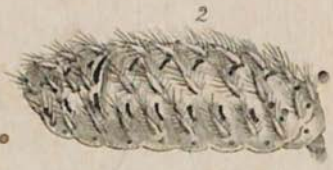
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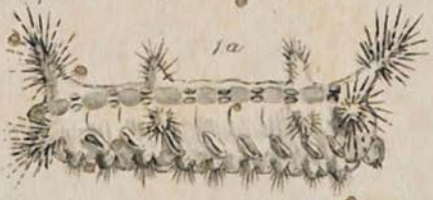
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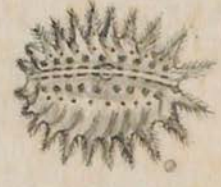
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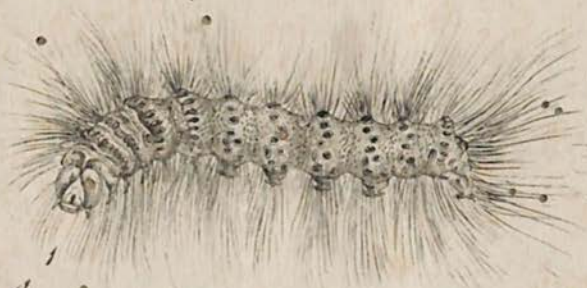

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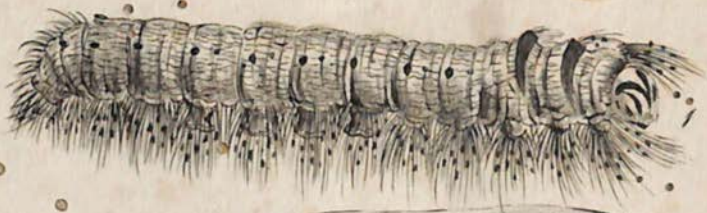
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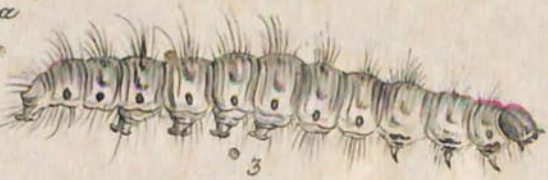
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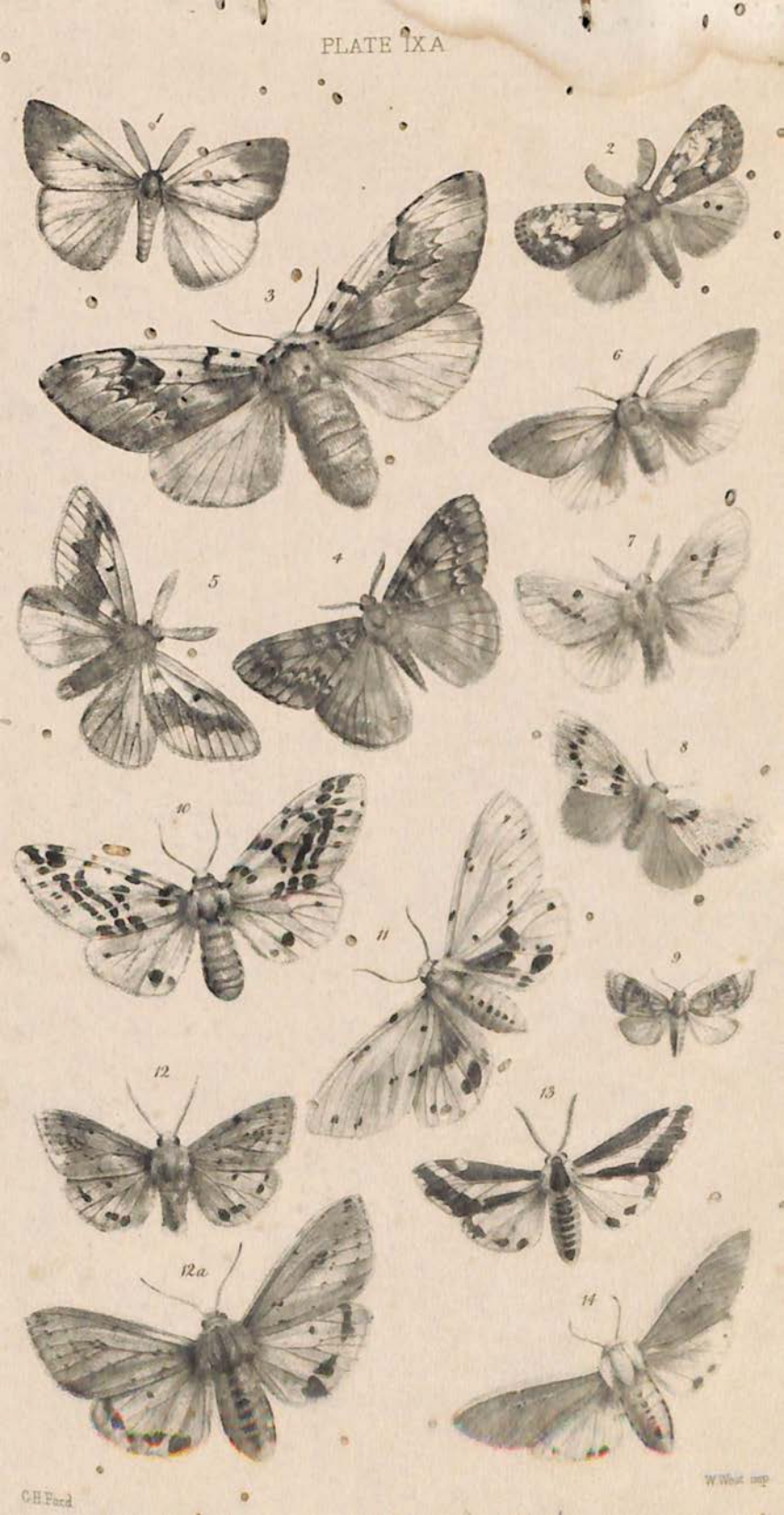
PLATE IXA



C.H.Ford

W.Wolf imp

W.West imp.

G.H.Ford

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C H Ford. W West imp.

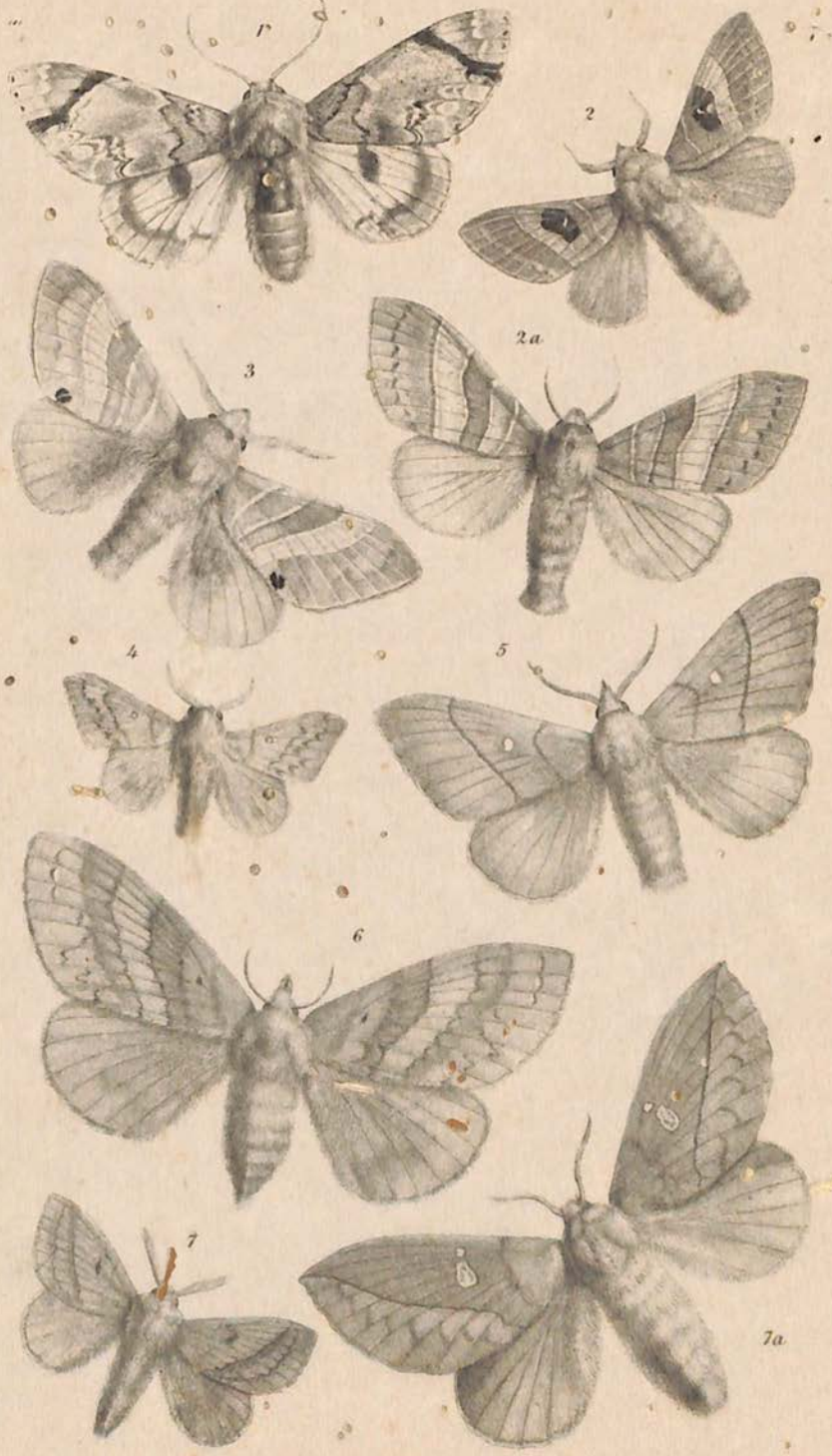

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PLATE XIII A.

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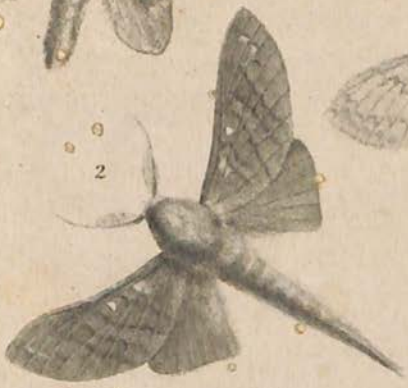
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W.West imp

C.H.Ford

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